The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE,

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 496.—Vol. XV.] LONDON: SATURDAY, FEBRUARY 22, 1845. [Price 6d.

IMPORTANT MINING PROPERTY, situated near Aberystwith, Cardiganshire, embracing the Cwmerfin, Llecknithalog, Llawr Cwm Bach, Blaen Caenant, and Plynlymon Lead and Copper Ore Mines.

MESSRS. FULLER and MARSH have been favoured with instructions from the committee of the Cardigan United Mining Company, to PEREMPTORILY SELL, BY PUBLIC COMPETITION, at the Auction Mart, on Thursday, March 6th, at Twelve o'clock, in ONE LOT, all that important and valuable property,

COMPRISING THE

CARDIGAN UNITED MINES,

situate near Aberystwith, embracing the Cwmerfin, Llecknithalog, Llawr Cwm Bach, Blaen Caenant, and Plynlymon, LEAD and COPPER ORE MINES, or adventure for lead and copper ore; and all other METALS and METALLIC MINERALS in and throughout the aforesaid mines; together with the MACHINERY, APPARATUS, BUILDINGS, FIXTURES, and IMPLEMENTS, and all the extensive and valuable WORKS connected therewith, the whole of which will be included in the purchase.

These valuable mines are considered rich with mineral extract, of the most productive character.

May be viewed on application to Mr. George Francis (captain of the mines), of whom descriptive particulars may be obtained any day prior to the sale; and at the Auction Mart; the Belle Vue Hotel, Aberystwith; the Bush, Bristol; Adelphi Hotel, Liverpool; Royal Hotel, Manchester; Pearce's Hotel, Truro; and at the office of Messrs. Fuller and Marsh, auctioneers and surveyors, 2, Charlotte-row, Mansion-house, London.

TO ENGINEERS, FOUNDERS, MACHINE MAKERS, STEAM-SHIP BUILDERS, RAILWAY CONTRACTORS, AND OTHERS.

PREMISES, MACHINERY, AND TOOLS.

There will be OFFERED FOR SALE, BY PUBLIC ROUP, within the Society of Advocates' Buildings, in Aberdeen, upon Tuesday, the 11th of March, at Two o'clock afternoon, at the UPSET PRICE of £9000, the extensive and valuable MANUFACTORY for the CONSTRUCTION of STEAM-ENGINES, BOILERS, General Machinery, Chain Cables, Anchors, Foundry Goods, Forged Goods, and General Blacksmith Work, well known as the

FOOTDEE IRON-WORKS OF ABERDEEN,

in the occupation of Messrs. John Duffus and Co.; together with the MACHINERY and TOOLS.—These works occupy nearly four acres of ground, at a very moderate feu duty, or ground rent; and are situated at Footdee, in the populous city of Aberdeen, within 300 yards of the harbour.

The engines, boilers, and machinery of several of the large class of steam-ships have been wholly constructed and fitted up at these works, which afford unusual facilities in that branch of business, and such as exist in few other establishments in the United Kingdom. The foreign and coasting trade of the port of Aberdeen is very extensive, and has rapidly increased during the last several years; whilst the steam trade to London, Hull, Leith, Inverness, Orkney, Shetland, &c., is carried on to a very considerable extent.

To a party desirous of engaging in the building and equipping of steam or sailing vessels, the construction and repairing of steam-engines, sugar-mills, rails and railway furnishings, and general machinery, these works, from their local situation and peculiarities within themselves, will be found to be particularly well adapted.

The whole of the buildings are substantial, commodious, and suitable for the respective trades carried on within them. The machinery is of the first class, and in excellent order—the whole having been erected at considerable expense.

There are included in the plant now offered for sale, Three steam-engines, of 16, 10, and 8-horse power respectively; the shafting connected therewith; cupolas, drying stoves, and cinder kilns in the foundry shops; smiths' forges, and whole tools upon the premises.

In the meantime the works are in full and active operation, with a long-established and valuable connection; and, from the establishment of a new gas work, projected railroads in the neighbourhood, harbour improvements, and other causes, there is every prospect of a brisk demand for this description of business for a long time to come.

The tools have been examined and valued by competent valuators from Glasgow, and the inventory and valuation will be exhibited to inquirers who may desire to see the same.

Should the premises not be sold, the machinery and tools, or portions thereof, may be separately disposed of, if suitable offers are made, or by valuation; and the premises, which are capable of being adapted to various purposes, may also be divided into lots, to meet the views of intending purchasers.

A plan and specification of the premises have been printed, and may, with all particulars and further information on the subject, be had upon application to Messrs. Johnston, Farquhar, and Leech, solicitors, London; Messrs. Jopp and Johnston, W.S., Edinburgh; or Messrs. Jopp and Shand, advocates, Aberdeen, in whose hands the title deeds of the premises are.

MINING MATERIALS.—TO BE SOLD, BY PUBLIC AUCTION, on Tuesday, the 18th day of March, 1845, at the IVY BRIDGE CONSOLS MINE, in the parish of Ugborough, county of Devon, by Messrs. SKADDON and SON, the following very valuable MINING MATERIALS—viz.:

A WATER WHEEL, 34 feet diameter, 10 feet 3 inches breast, with cast-iron rings, sockets, and cylinder cranks; an 18 feet diameter WATER WHEEL, 2 feet 8 inches breast, with drawing machine, drum, and one crasher attached; a capstan, with oak axle and cast-iron sockets; shears, with pulleys and brasses; two bobs, with gudgeons, chains, brasses, and scraps complete; 190 fathoms of horizontal rods, 2¼-inch round iron; 190 fathoms ditto, 2-inch square-iron; a large number of rod pulleys, and stands and brasses; two sweep rods, loggerheads, brasses, connecting checks, pins, and chains; two pendulums and wheel pit frames; three balance-bobs, with gudgeons, brasses, saddles, and sweep rods; sixty fathoms of 12-inch capstan rope; a large bell and stand, a horse whim, whim, and other kibbles.

10	9-feet 15-inch pumps	2	7-feet 10-inch windbores
14	9-feet 12-inch "	1	10-feet 10-inch "
11	9-feet 12-inch "	1	7-feet 9-inch "
4	6-feet 12-inch "	1	8-feet 7-inch "
1	5-feet 12-inch "	2	7-feet 7-inch "
1	2-feet 12-inch "	2	Wood "
13	9-feet 10-inch "	1	8-feet 12-inch working barrel
1	4-feet 10-inch "	2	9-feet 9-inch "
6	9-feet 9-inch "	1	9-feet 8-inch "
1	2-feet 9-inch "	2	9-feet 6-inch "
13	9-feet 7-inch "	1	9-feet 15-inch plunger-pole, with case, stuffing-box, and gland
2	9-feet 12-inch matching pieces	1	9-feet 11-inch plunger-pole, with case, stuffing-box and gland
1	15-inch H-piece	1	9-feet 7-inch plunger-pole, with case, stuffing-box, and gland
1	7-inch "	1	7-feet 8-inch plunger-pole, with case, stuffing-box, and gland
1	5-feet 15-inch clack door-piece	11	9-feet 3-inch iron pipes
9	4-feet 10-inch "	6	short pieces, 3-inch do.
1	6-feet 10-inch "		
2	6-feet 10-inch bucket door-pieces		
1	3-feet 9-inch "		
6	4-feet 7-inch "		

Wood metalling pieces, of various diameters, shaft and whim pulleys; about 90 fathoms of half-inch whim chain; 25 fathoms 6-inch rope, nearly new, with a quantity of various sizes; stamps, cyle, and frame, three stampheads, 20 pans and plates, two pairs of connecting cheeks, with pins and brasses; a quantity of rod and flange bolts, of various sizes; a quantity of staples and glands, four wrought-iron set-offs, two gins, double and single blocks, screw sockets, with screw tops and plates; 56 fathoms of 10-inch, 9-inch, and 8-inch Memel and Norway stamp-rods; a quantity of Norway and other timber, of various dimensions; 37 fathoms of 14-inch wrought-iron bucket-rods, with pump boxes and valves, shaft rollers and swords, two pairs of chain bevels, a grinding stone, beams, scales, and weights, a circular copper bottom sieve, and a square machine copper bottom ditto; a quantity of new and old iron, rods, doors, and windows of tenements and smiths' shops, and counting-house and material-house sieves of various descriptions, with bucking irons, buiches, sieves, and barrows; a 26-inch cobb's bellows, an anvil and vice, and various other smiths' and miners' tools; a quantity of old and new brass, and various other useful materials, too numerous to mention.—The materials are in excellent condition, and a considerable portion of them new.

Further particulars may be obtained from Captain Choke, Witham, Ivybridge; or from Mr. Collom, 37, Gibbons-street, Plymouth, who is authorized to settle all accounts, and to whom all persons having demands on the mine will please to send the particulars of their claims.—Dated Feb. 11, 1845.

Sale to commence each day at Eleven o'clock.

SLATE QUARRIES FOR SALE.—TO CAPITALISTS.

TO BE PEREMPTORILY SOLD, BY AUCTION, in the month of APRIL next, by order of the First Mortgagee, under a power of sale, unless previously disposed of by private contract, of which due notice will be given,

ALL THOSE VERY VALUABLE AND EXTENSIVE

SLATE QUARRIES,

known as the WEST DELABOLE and TREGAVERN QUARRIES, situate in the parishes of Endellion and Tintagel, in the county of CORNWALL.

This very eligible property possesses immense facilities for producing and shipping every description of slate, offering at the same time a safe and profitable investment, and may be viewed on application to Mr. Langford, of Boscastle, Cornwall; and plans of the quarries may be seen at the offices of Messrs. Finch and Neate, 57, Lincoln's Inn-fields.

London, Feb. 6, 1845.

Detailed particulars will be advertised previously to the sale.

KELSTON BRASS AND COPPER MILLS, situate on the navigable part of the River Avon, between Bath and Bristol.—TO BE LET, with possession on the 1st day of March next, the ABOVE MILLS, commanding water-power to a very great extent, and with TEN substantial houses attached, for the residence of workmen.—The machinery on the premises, some of which has been recently put in, may be taken at a valuation; but this is optional with the incoming tenant.

The mills are easily convertible to any other purpose, and the water-power is sufficient to be applied to two or more distinct objects.—There is a good wharf or landing place attached, distant six miles from Bristol and about the same from Bath, and the premises are approached by good roads.

For further particulars apply to Messrs. Goldney and Fellowes, solicitors, Chippenham; or Mr. William Jones, of Kelston.

NOTICE TO INVENTORS.—OFFICE FOR PATENTS OF INVENTIONS AND REGISTRATIONS OF DESIGNS, 14, LINCOLN'S INN-FIELDS.—The printed INSTRUCTIONS gratis, and every information upon the subject of PROTECTION for INVENTIONS, either by Letters Patent or the Designs Act, may be had by applying personally, or by letter, pre-paid, to Mr. Alexander Prince, at the office, 14, Lincoln's Inn-Fields.

THE ELECTRIC TELEGRAPH.—COOKE AND WHEATSTONE PATENTEES.

The ELECTRIC TELEGRAPH has been adopted on the following LINES:—

By ORDER OF THE LORDS OF THE ADMIRALTY, on the South-Western Railway, as a GOVERNMENT TELEGRAPH from the ADMIRALTY, Whitehall, to PORTSMOUTH, above NINETY MILES.

On the same line, as a Commercial Telegraph from Nine Elms to the Port of Southampton, 77 miles—with a branch to Gosport, 15 miles.

On the London and Blackwall Railway.

Great Western Railway, from London to Slough, 18 miles—the Windsor Telegraph.

Yarmouth and Norwich Railway, a "Single Way," 20 miles.

London and Dover Railway, from Tunbridge to Maidstone, a "Single Way," 15 miles.

Part of the Oldham Branch Railway.

Part of the Leeds and Manchester Railway.

Part of the Edinburgh and Glasgow Railway.

The Dalkey (atmospheric) Branch of the Dublin and Kingstown Railway.

London and Birmingham Railway—viz., from Northampton to Peterborough—a "single line," 47 miles.

In addition to the above, the Telegraph is about to be laid down on several "single lines" in different parts of England, Scotland, and Ireland.

Mr. Cooke is prepared to grant licences for the use or erection of the Telegraph for entire districts of country, where the boundary can be accurately defined.

Mr. Cooke will also undertake to erect a Telegraph in any part of the United Kingdom for a fixed amount.

For further particulars apply to W. Fothergill Cooke, Esq., Kidbrooke, Blackheath; or to Robert Wilson, Esq., solicitor, 1, Copthall-buildings, London.

RAILWAY WHEELS.—Two years' very extensive experience has demonstrated that T. BANKS'S PATENT MODE of RENEWING the WORKING SURFACE of WHEEL TIRES, with STEEL, effects a SAVING OF FIFTY PER CENT. of the expense of railway wheel tires above any other plan hitherto used.

For TERMS of LICENSE for England, Scotland, and Ireland, apply to

T. BANKS, ENGINEER, GERMAN-STREET, MANCHESTER.

The following firms have taken Licenses to Steel Wheels in their respective localities:—

Messrs. Robert Stephenson, and Co., engineers, Newcastle-on-Tyne.
" Swayne and Bovill, engineers, Millwall, Poplar, London.
" Kitson, Thompson, and Co., engineers, Leeds.

THE PATENT SAFETY FUSE, FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDITIOUS MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of the fact."

Manufactured and sold by the Patentees, EICKFORD, SMITH, and DAVEY, Camborne, Cornwall.

THE PATENT GALVANISED IRON COMPANY beg leave to announce to the public, that they are prepared to SUPPLY ROOFING, SHIP SHEATHING and FASTENINGS, CHAINS, and the endless variety of articles to which iron, not subject to rust, may be applied.—Testimonials may be seen by application at the office, 3, Mansion House-place, London.

CAUTION.—THE PATENT GALVANISED IRON COMPANY having ascertained that certain PARTIES are INFRINGING THEIR PATENT by the MANUFACTURE and SALE of a SPURIOUS and COUNTERFEIT ARTICLE, to the injury of the company and the detriment of the public, hereby give NOTICE, that this COMPANY have the SOLE PRIVILEGE of manufacturing and selling IRON COATED WITH ZINC, commonly called "Galvanised Iron," and that they will inflict the utmost PENALTIES of the law upon all PERSONS MANUFACTURING or SELLING the same without their authority, as well as upon all persons buying or using any Galvanised Iron not manufactured by them, or sold by their authority.

3, Mansion House-place, London, Jan. 24, 1845.

VICTORIA PARK CEMETERY COMPANY.

Registered provisionally, pursuant to 7 and 8 Vic., c. 110.

Capital £20,000, in 2000 shares, of £10 each.—Deposit 10s. per cent.

DIRECTORS.

George Offor, Esq.
Joseph James Foot, Esq.
James Collier, Esq.
Charles Salisbury Butler, Esq.
Frederick James Catling, Esq.
Robert Beeton, Esq.

This company is established to afford the means of sepulture to the population of the metropolis and in the eastern parts adjacent thereto, having for its object the securing an *ultimate and protected* resting-place for the dead, and a preventive against infection to the living—the necessity of promoting the health of towns, by prohibiting interments within their walls, is too universally admitted to need comment.

Applications for shares, &c., to be made (post paid) to John Humphreys, Esq., solicitor and registrar, 6, Spital-square.

PLYMOUTH, DEVONPORT, AND STONEHOUSE CEMETERY COMPANY.

TO BE INCORPORATED BY ACT OF PARLIAMENT.

Registered under 7 and 8 Vic., c. 110.

Capital £15,000, to be raised in 600 shares, of £25 each.

PROVISIONAL COMMITTEE.

(With power to add to their number.)

Rev. John Hatchard
Dr. Yonge
Mr. Prance
" John Holman
" — Wyatt
" Alfred Hingston
" John Alger
" J. Mills Carkeet
Mr. Jonathan Clouter
" Samuel Derry
" J. N. Bennett
" Thomas Fox
" William H. Hawker
" Robert Morris
" William Jos. Square
" Henry Woolcombe
Mr. John Forster.

J. ELLIOT SQUARE, Honorary Secretary.

PROSPECTUS.

The great advantages to arise to the public by the laying out of burial grounds at a short distance from populous towns, rather than in their centre (as now very generally prevails), have been fully shown by the discussion consequent on the introduction into the House of Commons, in August, 1841, by Messrs. Mackinnon, Cowper, and Beckett, of a Bill "for the Improvement of Health in Towns, by Removing the Interment of the Dead from their Precincts." In consequence of the introduction of this bill, a commission was appointed to examine into the state of burial grounds; but, as no step has been taken in consequence, it is useless longer to delay an application to Parliament, in the hope that the expense of a private Act may be avoided by the introduction of a general Government measure.

The crowded state of the church-yards and dissenting burial places in these towns points out the absolute necessity for a cemetery in the neighbourhood—whilst the health of the inhabitants must suffer by continued interments in the midst of our dense population. It is a fact which comes within the knowledge of some of the provisional committee, that one of the burial grounds in Plymouth is so crowded, that the sexton, after having bored for two hours in order to discover a place for a single corpse, has been unable to find one where it could be deposited, without interfering with recently constructed graves; and it is notorious that more than the bones of the departed are at times exposed in making fresh openings. These facts would alone be sufficient to induce the more public-spirited of the inhabitants of the three towns to lay out a General Cemetery, even were it attended with loss; but, when it is known that in other parts of England where cemeteries have been constructed pecuniary advantages have resulted, it is confidently hoped that the present undertaking will meet with general support.

The proposed cemetery is designed as a place of sepulture for all denominations—a part to be consecrated for the interment of members of the Established Church, and the remainder to be open to Dissenters of all persuasions, in which surviving friends may bury their dead with whatever religious rites and ceremonies their consciences may dictate, and erect monuments to their memory. The grounds to be laid out in a becomingly ornamental manner, and rendered secure from intrusion. Land for vaults or graves to be sold in perpetuity. A plan of the ground, with the position of every monument and names of owners, as well as register of the age, death, former place of residence, and description of every individual interred, to be kept, and open for public inspection; and it is intended that the Acts of Parliament for the incorporation of the company shall contain a clause to make such entry legal evidence.

It is proposed that the affairs of the company be managed by trustees, under a Deed of Settlement, until it is incorporated. The capital to be £15,000, in shares of £25 each; a deposit of £5 per share to be paid on the allotment of shares.

As soon as 400 shares are subscribed for, and the deposits paid thereon, the company to be considered as formed, and the shares appropriated by the provisional committee, who shall thereupon convene a meeting of the shareholders, for the choice of a competent number of directors and other officers. Subscribers may, at such first meeting, vote either personally or by proxy, through the medium of some duly qualified shareholder. Each share to entitle the holder to one vote.

Applications for shares to be addressed, in the following form, under cover, to

WOOLLCOMBE, SQUARE, STEPHENS, and FRANCE, Solicitors, Plymouth.

To the Provisional Committee of the Plymouth, Devonport, and Stonehouse Cemetery Company.

GENTLEMEN,—I request to become a subscriber for shares in this undertaking, and agree to take so many of such shares as shall be allotted to me, and, on receiving notice of such allotment, to pay the deposit of £5 per share in respect thereof, or of so many of them as shall be granted to me, and to execute the company's Deed of Settlement whenever called on so to do. I am, Gentlemen, your obedient servant,

The Christian Name and Surname, with the date and address, to be signed by the applicant

THOMAS WREN, STOCK AND SHARE BROKER, 122, FISHERGATE, PRESTON.—*Established 1836.*

ALLIANCE GAS COMPANY, 39, Finsbury-circus, London, Feb. 18, 1845.—Notice is hereby given, that the ANNUAL GENERAL MEETING of proprietors of the Alliance Gas Company will be HELD at the company's office, No. 39, Finsbury-circus, London, on Friday, the 7th day of March next, at Two o'clock precisely, when two directors will be elected, in lieu of two who retire by rotation, but who are re-eligible.

By order of the board,
J. B. GREAVES.

CONSOLIDATED TRETOIL MINING COMPANY.—The directors hereby give Notice, that a SPECIAL GENERAL MEETING of the shareholders will be HELD at the offices of the company, 6, St. Mildred's-court, Poultry, on Wednesday, the 5th of March, at Two o'clock P.M. precisely, in order to fill up the vacancy in the direction, caused by the death of Mr. Heppell, and to complete the number of directors, in conformity with the rules and regulations of the company.

Feb. 20, 1845.

THE GENERAL HALF-YEARLY MEETING OF THE WEST CORK MINING COMPANY will be HELD at the George and Vulture Tavern, Cornhill, in the city of London, on Thursday, the 6th day of March next, at One o'clock in the afternoon precisely, on the general business of the company, and also for the election of two directors and one auditor; and take Notice, that every proprietor intending to become a candidate to fill the office of director or auditor, must, within fourteen days from the time of the insertion of this advertisement, signify by some writing under his hand, stating the place of his residence and addition (such writing to be left within the same fourteen days at the office of the company, 39, Coleman-street, in the city of London), his intention so to become a candidate.

By order of the board,
London, Feb. 4, 1845. T. M. SHADWELL, Secretary.

UNITED MEXICAN MINING ASSOCIATION.—Notice is hereby given, that a SPECIAL GENERAL MEETING of proprietors of this association will be HELD at the London Tavern, Bishopsgate-street, on Thursday, the 27th of February inst., at One o'clock precisely, to submit to them the instructions proposed to be given by the court of directors to their manager, Mr. Shoolbred, on the question of future engagements, previously to his return to Mexico.

By order of a court of directors,
London, 8, Great Winchester-street, Feb. 11, 1845. JOHN MATHER, Secretary.

PROVIDENT CLERKS' MUTUAL BENEFIT ASSOCIATION AND BENEVOLENT FUND.—Notice is hereby given, that the FOURTH ANNUAL GENERAL MEETING of the donors, subscribers, and friends of this association, will be HELD at the London Tavern, Bishopsgate-street, on Wednesday evening, the 26th February inst., at Six o'clock precisely.

JOHN ABEL SMITH, Esq., M.P., Treasurer, in the chair.

The attendance of clerks generally is particularly invited.

GEORGE THOMAS, Chairman.

60, King William-street, London-bridge, Feb. 8, 1845.

IMPORTANT TO ENGINEERS AND OTHERS ENGAGED WITH WORK FOR RAILWAYS, GAS, AND WATER WORKS, &c.

PARK IRON-WORKS, SHEFFIELD.

The MACHINERY, TOOLS, STOCK, &c., of these justly celebrated works to be DISPOSED OF, with early possession. The foundry is capable of turning out 100 tons of work per week, and the engineering department a considerable quantity of every description of work for railways, &c. The rent of the buildings, including a very good house for a principal or manager, is under £200 per year. Water conveyance to all parts of the world comes into the works, which are also within a shilling per ton delivery to a very important railway station.

To view the same, and for other particulars, apply to Mr. W. Johnson, on the premises; at 38, Moorgate-street, London; or at Brymbo Iron-Works, near Wrexham, on and after the 14th of February.

STAFFORDSHIRE.

COAL AND IRONSTONE MINES.—TO BE SOLD, BY AUCTION, in the month of MAY next, by Mr. CORBETT, auctioneer, Bilston, the valuable FREEHOLD ESTATE and COLLIERIES, situated at Dariaston-green, adjoining to the Birmingham Canal and the Grand Junction Railway, containing about sixty acres; and also the MINES and MINERALS under the same; together with the ENGINES, PITS, the very complete CEMENT-WORKS, FREESTONE QUARRY, and MACHINERY thereon.

N.B.—The Birmingham Coal Company are now sinking a shaft to prove the Ironstone Mines, especially the Blue Flats, in the upper part of the estate—the lower part having already been sufficiently proved by the practical working of the same.

For further information apply to Mr. Rawlins, solicitor; Messrs. Tyndall and Son, solicitors; Mr. Lawrence, at the Birmingham Coal Company's Offices, all of Birmingham; Messrs. Cope and Son, mine agents, West Bromwich; or to the auctioneer, Bilston.

ANDREW SMITH'S PATENT WIRE ROPE, FOR MINING, RAILWAY, and SHIPPING PURPOSES.—The Royal yacht *VICTORIA AND ALBERT, PENELOPE, VIRAGO, HERMES*, and several other ships in the Royal Navy, as well as the Merchants' Service, have been FITTED WITH ANDREW SMITH'S PATENT WIRE ROPE; it is about half the size and weight of hempen rope and one-third cheaper.—For particulars apply to A. Smith, 69, Princes-street, Leicester-square; White Lion-court, Cornhill; or at the works, Millwall, Poplar, London

STEAM TO INDIA VIA EGYPT, MALTA, ITALY, ALEXANDRIA, AND THE PENINSULAR PORTS.

PASSAGE TO BOMBAY, MADRAS, AND CALCUTTA.

The Peninsular and Oriental Steam Navigation Company's steam-ships

SET AT FOM SOUTHAMPTON THE FIRST OF EVERY MONTH,

arriving at Alexandria about the 15th. The Hon. East India Company's steamers leave Suez for Bombay about the 22d of the month, and for Madras and Calcutta the Peninsular and Oriental Steam Navigation Company's steamers, *Hindostan* and *Bentinck*, or Government steamer. The Peninsular and Oriental Steam Navigation Company have now a steam-tug on the Mahmoudeh Canal, and other great improvements have lately been introduced into the transit through Egypt.

STEAM TO MALTA, ITALY, &c.

A steamer from Southampton leaves the first of every month for Malta, whence are steamers to Naples, Genoa, Civeta Vecchia, three times a month.

STEAM TO OPORTO, VIGO, LISBON, CADIZ, AND GIBRALTAR.

A steamer leaves Southampton every Thursday at 3 p.m. for the above places.

Apply at the Peninsular and Oriental Steam Navigation Company's offices, 51, St. Mary Axe, London, where only passages can be secured throughout.

IRON STEAMERS.—WANTED, a PARTNER, with a capital, in an ESTABLISHED IRON FOUNDRY, situate on the western coast, of high connection, and better adapted than most others in the kingdom for the BUILDING and FITTING-UP of IRON STEAMERS, as well as for all other branches of the iron engineering trade.—Apply to Messrs. Peppercorne, 2, Old Broad-street, City.

SOUTHAMPTON DOCK COMPANY.—At the Half-yearly General Meeting of the Southampton Dock Company, holden at the company's office, No. 19, Bishopsgate-within, London, on Thursday, the 20th day of February, 1845, Colonel BARLOW in the chair,

It was unanimously resolved—

1. That the report now read be received, and printed for circulation amongst the proprietors.

2. That Colonel George Edward Pratt Barlow, Lieut.-Col. George Henderson, George Burnand, Esq., and Henry Ranking, Esq., be, and they are hereby, re-elected directors of the company.

3. That the best thanks of the proprietors are due, and are hereby presented, to Daniel Maclaurin, Esq., and James Arboulin, Esq., for their services as auditors for the past year.

4. That Daniel Maclaurin, James Arboulin, and James Parker Woodhouse, Esqs., be re-elected auditors for the current year.

At a Special General Meeting of the proprietors, holden at the company's office, the same day, specially convened for the purpose of receiving and considering the draft of the proposed bill (to alter and enlarge the powers and provisions of the company's existing Acts of Parliament, and to alter certain provisions of the Act 1 and 2 William IV., c. 1, for erecting and maintaining a pier and other works at Southampton) to be applied for in the ensuing session of Parliament, as also the recommendation of the directors for borrowing the sum of £50,000 on debentures, under the powers of the company's amended Act, 6 and 7 Victoria, c. 65, for the construction of a graving dock—

Colonel BARLOW in the chair,

It was unanimously resolved—

That the proposed bill in Parliament, of 8 Victoria, session 1845, "to alter and enlarge the powers and provisions of the Acts for making a dock or docks at Southampton, and to alter certain provisions of an Act passed in the first and second years of his late Majesty King William the Fourth, c. 1, for erecting and maintaining a pier and other works at Southampton," a draft whereof has this day been submitted to this meeting and read, be approved.

Resolved unanimously—That the directors be empowered to borrow and take up at interest the sum of £50,000, part of the sum of £150,000, by the Act of 6 Victoria, c. 65, authorised to be borrowed and taken up at interest, in addition to the sum of £150,000, which the said directors are already empowered to raise, under and by virtue of the Act of 6 William IV., c. 29; and to mortgage, assign, and charge this undertaking, and the rates, tolls, and other sums arising, or to arise, under the said Acts, to the party or parties who shall advance the same, in manner directed by the said Acts.

Resolved unanimously—That the best thanks of the meeting are due to the directors for their able services to the company, and to the chairman for his conduct of the business of the day.

GEORGE SAINTSBURY, Secretary.

London, Feb. 20, 1845.

Law Intelligence.

LAW OF PATENTS—GALVANISED IRON.

COURT OF COMMON PLEAS.

PATTESON AND OTHERS *v.* HOLLAND AND OTHERS.—In our last week's publication we gave the result of this cause, which had occupied the court three days, and from its importance, as affecting the validity of patents, we are induced to give a report at greater length, while some observations in another column will be found to bear on a subject which must be generally interesting to our readers.—This action was brought for the infringement of a patent granted in 1837, for an "improvement in coating or covering iron or copper for the prevention of oxidation." The defendants, besides a number of other pleas, pleaded—first, that they were not guilty; secondly, that the plaintiffs, or those they represented, were not the first and true inventors, and, further, that the specification did not particularise and determine the nature of the invention, and in what manner the same was to be performed. The evidence, on the part of the plaintiffs, which extended to a great length, related to very few points, the main question being, that if the patent were valid, whether the defendants had infringed it. No witnesses were called on the part of the defendants, who relied upon the cross-examination of the witnesses put forward on the part of the plaintiffs; but several scientific persons were examined on behalf of the plaintiffs, and upon whose cross-examination the defence was rested. The specification stated, that the zinc by which the iron or copper was to be coated might be used either in a state of fusion, or in a solid state reduced into powder. The iron was to be previously scoured by immersing the metal in water acidulated with sulphuric acid, or by dipping it into a solution of sal ammoniac, or in water acidulated with muriatic acid. The metal pieces, after being dipped, were to be dried immediately, and, as the specification stated, might be dried by holding them over a reverberatory furnace. The zinc was to be melted in a crucible of earthenware, or of cast-iron lined with bricks, or an earthen lining of some kind. The specification then stated, that the zinc, being melted, must be skimmed carefully, and the surface covered with sal ammoniac, after which the plates of iron or copper were to be slowly introduced into the melted zinc. With regard to small pieces of metal, such as nails, small chains, &c., they were to be thrown into the melted zinc, covered with sal ammoniac, and afterwards put into a reverberatory surface, and covered with charcoal. A red heat was to be maintained there during a quarter of an hour, while the mass was moved and shaken, until the pieces of metal had discharged the excess of zinc which they had taken up. It was admitted, in the course of the trial, by the witnesses for the plaintiffs, that the coating of iron with zinc, as a means of preventing its oxidation, had been known in England, and circulated in scientific publications, at least half a century. There was no evidence, in the first place, to show that a reverberatory furnace had ever been used; and one of the witnesses admitted, on his cross-examination, that, although it might be possible to use an earthenware crucible, it would, practically speaking, be impracticable. It seemed also to be their opinion, that the zinc on nails and small chains, if exposed to a red heat for a quarter of an hour, although covered with charcoal, would, for the most part, volatilise, and thus render the process almost nugatory. —The jury, after an absence of half an hour, returned into court, finding for the plaintiffs on all the issues but the fifth, which they found for the defendants; thereby, substantially, giving a verdict for them, and thus, in a great measure, stultifying the verdict given in favour of the plaintiffs on the other points.

TALACRE COAL AND IRON COMPANY.

HOWARD *v.* SHAW.—This cause, arising out of the Talacre Mine, came on in the Court of Queen's Bench, in Dublin, on the 10th instant, before the Lord Chief Justice Pennefather, and the trial lasted six days.—Messrs. Whiteside, Q.C., M'Donough, Q.C., Napier, Q.C., and Pakenham, were counsel for the plaintiff; solicitor, Mr. Chadwick, Dublin. Messrs. Fitzgibbon, Q.C., Nelson, Q.C., Holmes, and Fitzgerald, were counsel for the defendant; solicitor, Mr. Neilson, Dublin; agent in England, Mr. W. H. Ashurst.

The action was first tried in May, 1842, when evidence, which was tendered by the defendant, to prove fraud in the origin of the Talacre Company, was rejected by the judge who then tried the cause, and a verdict taken, by the judge's directions, for the plaintiff. That verdict was set aside last term, and hence the present trial. The plaintiff is a solicitor, residing at Cheltenham, and the defendant resides at Celbridge, near Dublin, and was proprietor of some large flax mills there. Mr. Howard sued as indorsee of a Mr. Lewis Levason, to recover from Mr. Shaw the amount of two promissory notes for 3850*l.* and 3901*l.* 13*s.* 4*d.*, signed by the defendant, a Mr. Chappelow, and others, and given to Levason, as part of the price of that company's mines; and the defendant resisted it, on the ground that the mines were of no value, and were fraudulently represented to be of great value.

Mr. WHITESIDE, for the plaintiff, put in the two notes, and an order of the Lord Chancellor of Ireland, ordering the defendant to admit the signatures to the notes on the trial, and then closed for the plaintiff.

Mr. FITZGIBBON, for the defendant, in a speech of great length, claimed a verdict for Mr. Shaw on two grounds. First, he alleged that Mr. Levason, Messrs. Alderman Thomas Wood, Weston, Davis, and others, who originated the Talacre Company, and were co-proprietors in the mines, had entered into a fraudulent conspiracy to defraud the public in raising the company, and to procure from the shareholders of the company an enormous price for the mines, and that the defendant, who had already paid 7000*l.* or 8000*l.* to the company, had been induced, by the misrepresentations of Wood and others, to sign the notes in suit, without receiving any value for them; and, secondly, that Mr. Howard, the plaintiff, was a mere instrument of Levason's to bring the action; that he had concocted a false consideration to Levason for the notes, and was not entitled to recover.

Counsel on both sides tendered exceptions to evidence.

Mr. Robert Dagleish (of Wigan), mineral engineer and colliery owner, deposed to having inspected in 1843, and a few days before the trial, the Talacre properties. No coal-field existed in the Picton take, and the pit there was now twenty-seven yards in water. No company could have been justified in erecting works upon it; and, in his opinion, the works he found there had not been placed for any useful purpose of mining. This witness then negatived the truth of the exaggerated statements contained in Bagnall's report and the prospectus. On the Marsh there were bore holes, and coal had been found there; but his opinion was, that that Take could not be worked, except at enormous expense, and even then the danger was very great—it would be a most dangerous speculation; and the strata was much broken up and intersected with bars or faults; besides the ground lying on the level of the sea, great steam-power would be requisite before any workings could be carried on. The report of Bagnall, which stated the mines upon which he reported could be unwatered by an adit level, could not include the Marsh take; for it was impossible to drive an adit under the Marsh, as that would be driving an adit under the sea. There was a twenty-inch seam of coal in the Picton take; but men of experience in these matters knew well the impossibility of working such a seam, situated as that seam was, to a profit. The Bryn take had contained a small quantity of good coal.

Mr. John Dawson (of Gronant, Flintshire, near the Talacre Works, steward to Sir Edward Mostyn), deposed to the same facts as he did on the former trial, and which have already appeared in the *Mining Journal*. The short substance of his evidence was this:—Bagnall in 1838 had been employed to bore for coal about Talacre, and failed. In September of that year a meeting was held at Chester, at which were present Mr. Alderman Thomas Wood, Baker, Bagnall, Davis, and others; soon afterwards, Bagnall applied for a lease of the Picton Mine to Levason and Baker. Levason and Baker then erected conspicuous works, whimsies, &c., at the top of the high ground near the road, and also a railroad, and made great show, and a shaft was sunk, all before coal was found, or any new boring made. Witness remonstrated with Levason about these works, telling him there was no coal; to which Levison replied, he (Dawson) did not know the use they were going to make of them. Mr. Dawson's evidence went to show various acts of Wood, Levison, Davis, and the rest, at the works—the sending coal from the Bryn to Dublin, and that all the properties were now thrown into Sir Piers Mostyn's hands.

John Davis (a miner) swore to having been directed by Levason to bore at the bottom of the Picton Pit, and boring 100 yards without finding coal. He deposed that the shaft was sunk in Picton Pit, and old pillars found; enough was taken to fill three carts, and then those carts were taken by Levason round the village with music; that he was told by Levison not to go through the bit of coal found in the pit, and promised a present if he kept it a secret, and said it was all coal.—This witness was cross-examined with great severity by Mr. WHITESIDE, but his evidence was not shaken; he adhered to the conversations with Levason, and stated the coal found in the old workings was full of sulphur—very bad coal.

Edward Price—Was formerly one of the proprietors of the Bryn; before that colliery was parted with, Levason purchased three cargoes of coal from it. These cargoes, or two of them, were subsequently traced to have been purchased by the acting directors (Wood, Weston, Davis and others) of Levason and Baker, and sent to Dublin, and a great mass of evidence was given, showing that when these coals of Price and Co. arrived in Dublin they were advertised and placarded as "Talacre Coal," and an invoice of Levison and Baker was produced, charging for these and other cargoes; and two checks, signed by Wood, Weston, and Davis, paying for them to Levison, produced and proved.

Thomas Parry, a clerk at the weighing-machine of Price and Co., confirmed Price's evidence, and the taking of Bryn coal to Dublin. This witness and Price also confirmed Mr. Dagleish's statement of the exhausted state of the Picton as a coal-field. Other evidence was called on these matters, which went to nearly the same effect.

Mr. J. E. Bradfield, clerk to Mr. Ashurst, of London, produced and proved a great mass of books and papers, material to the questions raised in defence. The most important were, a lease of the Talacre or Picton Mine, dated 1st of January, 1839, to Levason and Baker, granted for 31 years, without any premium, at a peppercorn rent the first year, 500*l.* rent the second year, 750*l.* rent and royalties the third year; the surrender of this lease, and a new lease dated 31st July, 1839, to Wood, Weston, Davis, Levason, and others. A report, in Davis's writing, signed by Bagnall, dated 4th January, 1839, valuing the Talacre Mines at 470,000*l.*! and praising them (this report was incorporated into the prospectus). A report of Weston and Davis, dated 21st June, 1839, stating they had, from March to June, circulated in Dublin 5000 prospectuses and 1000 statements of profits and advantages to accrue from working the mines. An agreement of 28th February, 1839, between Levason and Baker, and Wood, Weston, Davis, and others, by which Levason and Baker were to receive for 777 acres of property 15,000*l.* in cash, and 23,850*l.* of shares in the company to be formed; but stating that if the company were not formed by June, 500*l.* was to be paid to Levason and Baker, and that agreement cancelled. Another agreement, dated 19th November, 1839, between Levason and Baker, and Wood and the other lessees, in the lease of 31st July, agreeing to give Levison, for his different interests and for his shares, 19,000*l.* in cash. (It was for part of the consideration in this deed that the notes in suit were given, thus plainly establishing it was Wood and the other lessees, and not Shaw, Chappelow, or Taylor, who were liable to Levason.) The Deed of Settlement, dated 3d Oct., 1839, by which Wood and the other lessees (but omitting the name of Levason) were to receive from the company 20,000*l.* in cash, and 90,000 in shares of the company, to be deemed and taken as paid up shares, the company's capital in shares being stipulated to be 118,000*l.* in shares, so that the originators took to themselves more than half the capital. The books showing Wood and others had taken from the company and portioned to themselves and their associates the 90,000*l.* of paid up shares. This witness proved a great mass of other papers and books, but the above were the most material.

Mr. Gresham gave evidence of being visited by Mr. Alderman Thomas Wood in 1839 (Wood being then High Sheriff of London), when he went to Dublin, and receiving flattering statements as to the company, which induced him to attend one of the public meetings, and make a speech, which Mr. Gresham now stated he much regretted being led to do, he having been then deceived.

Mr. George Taylor, a director of the company, who had signed one of the notes in suit, deposed to many of the alleged acts of fraud. He stated, also, that he had been led by Wood to believe he was indebted to Levason, and was present when Shaw signed the notes, in February, 1841. The form was then dictated by Wood, who was solicitor to the company, and in the chair; at the meeting Wood refused to sign the notes himself, because of his partnership articles. No money or consideration was received for the notes. This was how they had been signed. He did not know, until about September following, of the deed of November, 1839, which showed Wood and the other lessees only were liable. That knowledge he obtained from Mr. Ashurst, who had been employed to investigate the company's affairs. Witness had been to the works for two or three days before he signed the notes, to investigate the conduct of some of the servants there; but he knew nothing of the fraud then. After the notes had been signed, he went to the works again, and remained some time; and then his eyes were opened, and not before.

Messrs. Russell, Bewley, and others, proved various acts of the parties in Dublin; and several persons were produced from newspaper offices, to prove advertisements; and after this the defendant's counsel closed the first branch of their case. Mr. Bradfield, and Mr. Winterbotham (a solicitor, at Cheltenham), were examined on the second branch—namely, to prove that the houses which Howard had passed to Levason, as the consideration for the indorsement, were obtained by Howard just prior to a general meeting, on the 15th September, 1841, when a report on the frauds was to be made to the shareholders by Mr. Ashurst; and also to show that that consideration was not *bona fide*.

The defendant's case here closed.

Mr. WHITESIDE called for a verdict for the plaintiff.

The JUDGE said there was a good case made out to go to the jury; and there was also evidence that Howard had not given consideration; and the plaintiff must now go into a "rebutting" case, to show he had given consideration to Levason.

Plaintiff's counsel then called evidence to prove that Howard had given good consideration in six houses at Cheltenham to Levason; and many deeds and agreements were put in evidence. It, however, turned out that the property was deeply incumbered, and that five of the six houses had only been acquired by Howard in *contract*, on the 13th September—that he had passed them all over, as his own and unincumbered, on the 14th September, to Levison—that the consideration in the deeds to Levison was stated to be money, whereas it was the notes in suit—that there was a second deed, dated also 14th September, by which Howard covenanted to pay off the incumbrance in twenty-four months, but which did not appear to have been done; and that the morgagees were in receipt of the rents of four of the houses.

Mr. NELSON replied on this evidence, and commented with great severity upon the course pursued by Howard to get the notes. He impugned that transaction as fraudulent, and the jury, he said, would see the motives which could have influenced such proceedings. Where was Levison? Bagnall?—where were Wood and others, upon whose testimony, if the case were honest, the plaintiff would have got a verdict?—but they were withheld, and a strong confirmation of the defendant's case had been given by the plaintiff's own witnesses.

Mr. M'DONOUGH replied upon the whole case, in a speech of seven hours' length, in which, with great eloquence and ability, he sought a verdict for Howard. With respect to the first branch of the case, he contended no fraudulent conspiracy had been proved; on the contrary, it was shown everything was done in broad open day. The defendant had taken shares in the company; had taken the mines, and he had given them up; and would neither give back the mines to Levison, or pay the price of them; he had signed the notes after an investigation of all the circumstances; he did everything with his eyes open, and he was too late. Before he put his hand to the papers, he ought to have inquired. If that defence succeeded, there would be end to all commercial credit, and no man would be safe in taking a note or bill.—With respect to the second branch, he contended the defendant ought to have disproved the deeds and witnesses produced by the plaintiff by direct evidence, and not inferences deduced from the deeds. The learned gentleman concluded by eloquently calling upon the jury not to convict the parties of fraud and conspiracy upon such evidence as had been presented to them by the defendant's counsel.

The LORD CHIEF JUSTICE summed up on Saturday evening at great length. He charged the jury that if they should be of opinion that there was an original deliberate fraudulent conspiracy of several persons to cheat the public, and entered into with that view, and so deliberately carried on until the fraud was completed and perfected, they might find for the defendant, and he would leave it to the jury whether Mr. Howard gave value to Levason for the notes, or whether he gave a fraudulent consideration. In conclusion, his Lordship said he had written down the questions which the jury had to consider, and which he read over and handed to them; and said—If you believe that the origin of the transaction in question was a concocted deliberate plan in 1838 or 1839 or since, by Levason and his co-proprietors, to raise and create a scheme which the parties afterwards carried into effect, by common consent, to make the public believe that they were possessed of mining property which they represented to be of great value (but which they knew to be of none), in order to induce the public to take shares therein. And if you believe that the defendant was thereby induced to become a shareholder, and as such was falsely led to believe himself under liabilities to Levason at the time he signed these notes to which he was not then liable. And if you believe that the defendant had then no means of informing himself of the truth, in regard thereunto, then you will find for the defendant; otherwise for the plaintiff. Unless you are of opinion that the plaintiff did not become *bona fide* indorsee you should find for him. If you think the transaction of buying and selling at Cheltenham was *bona fide* you should give him the benefit of being a *bona fide* indorsee. His Lordship added, that the jury might find either specially on either of those two questions, or on both, or generally on all grounds, for plaintiff or defendant.

The jury retired and deliberated for about half an hour, and then came into court and gave a verdict on all grounds for the defendant.

[We have, so far as space allowed, given the evidence, and main points raised by counsel on both sides, in this important and "monster" trial, occupying as it did six days, and not terminating until half-past two o'clock on *Sunday morning*. We are somewhat unused to verdicts being delivered on the Sabbath, but we suppose that it is Dublin practice; however, if such be the case, we should gladly record rather the breach than the observance. It is quite clear that in the law courts of Ireland much time is consumed in mere twaddle—but, as we suppose lawyers there, as in London, must (and, forsooth, will) be paid, it is, doubtless, their province to render words glibly given for their fee. Some eighteen or twenty hours were, we find, consumed in the address of counsel, which, however, was not in their opinion sufficient—and, consequently, throughout the various stages of the action, it appears that the counsel for the plaintiff raised all those objections as to evidence which the law or practice (that is to say, Irish *practice*) allows. We object, say they, to "this," and next to "that"—indeed, the course pursued by them is just such as might be expected from the legal *clique*. The counsel for the plaintiff (Mr. M'Donough) occupied seven hours in addressing the court; and, most certainly, from the report we have seen, but which is too lengthened for our columns, he did well earn his money, although we think his talent might have been better employed. However, talent, unfortunately, as regards the bar, is the property of the best bidder—principle is lost sight of, as is clearly the case with Ald. Wood, who, we are informed, although not brought up to the bar, has strong grounds for establishing his claim in being brought up at it. The Judge occupied some three or four hours in summing up, and the verdict was, as we have before observed, given on *Sunday morning*. We have observed on the time occupied by counsel, and, were it alone confined to the speeches made, we should not so much complain; but the *cross*-examination of witnesses on points of which they (the plaintiff's counsel) were in a state of the most blissful ignorance excites regret, that matters of this nature should be placed in the hands of parties not competent to understand or appreciate the merits. However, it is highly satisfactory to find that the jury gave their verdict perfectly consonant with the justice of the case, although six whole days were consumed in the endeavour on the part of the plaintiff to establish his assumed position. We cannot close our report without adverting to one or two *innocent* questions put by plaintiff's counsel to the defendant's witnesses. For instance, Mr. Dagleish was asked whether he had ever been down the *bore hole*; the question elicited a smile from the auditory, while the witness under examination very quietly asked the learned counsel, whether, taking the bulk of the gentleman who put the question into consideration, it could be considered practicable for him to put himself down a hole of two or three inches in diameter. Again, the witness was required to state whether he had been down the Picton Pit—the reply of Mr. Dagleish being simply, that there was eighty-one feet of water in the pit, which was somewhat too deep for him, whatever it might be for the counsel, who, perhaps, considered himself *deep* enough.]

IRISH WASTE LAND IMPROVEMENT SOCIETY.

It is not often that we have experienced such sincere gratification as we felt on the perusal of a little unassuming pamphlet, entitled *A Visit to the Gleneask Estate of the Irish Waste Land Improvement Society* (by a Proprietor). The instruction it contains is blended with a pleasant vein of humour, which wins at once our attention and admiration, and the benevolence that pervades every line of the interesting sketch arouses our sympathy in the cause, and our admiration for the author. The society to which it has reference is one deserving the support of every man who has the welfare of his fellow-beings at heart. Originated in a spirit of genuine Christian benevolence, having for its object the happiness of a suffering but noble race of beings, who, naturally possessed of the noblest traits which honour the heart, from pure neglect, both of their physical and moral cultivation, and solely from a want of being taught a better and happier mode of living, have become wild and impetuous, where a little fostering care, and a kindly word of reasoning, would have elevated their character to a standard lower than that of no other nation on the earth, the company is entitled to unbounded praise.

This fostering care, and this word of reason, the Irish Waste Land Improvement Society, to its honour, first propounded and offered, and although, as it were, unassisted by the patronage of the great, and neither honoured by the countenance which some schemes far less noble in their motive, and useful in their results, have received, nor entrusted with the entire confidence of those whose welfare was its sole design, yet has it struggled on in its unostentatious but sacred course, and, after encountering some opposition, yet conscious of its own purity and disinterestedness, has carried its operations fearlessly and assiduously on, till its labours have been crowned with a steady and cheering success. The "Proprietor" whose little work is before us is deeply imbued with the principles of the society, and unshaken confidence in its utility, and such we are sure must every one equally feel who will take the trouble to read his "visit." We promise even the most shallow reader on such subjects an hour's amusement of no common nature. A better idea of the work will, however, be conveyed by an extract or two, which will at once show, not only by statistics, the advantages the society has already wrought, but by the light and happy humour of the writer, speak to the heart in favour of the undertaking. After giving a spirited account of his journey from the "Beautiful City," the proprietor proceeds thus to describe the society's estate:—"The estate of Gleneask, comprising 5669 statute acres, is beautifully situated on the south-eastern slope of the Slievh Gauff Mountains, which do not here much exceed the altitude of 1000 feet above the level of the sea, and forms, with the north-western slope of the opposite range, a wide glen or valley, extending from Lough Talt on the west to Lough Easky on the east, about seven English miles, with a breadth varying from four miles at the south-western end to a narrow point, where the mountain terminates on the eastern extremity of the Easky Lake. The whole valley, which is watered by numerous rills, and enlivened by a mountain torrent, which, bounding over large granite boulders, forms in one part a picturesque cascade, as well as all the lower slopes of the mountain available for tillage, are, almost without exception, pure, unmitigated peat bog, two to eight feet in depth, with a substratum of clay or gravel. This includes about 3500 acres, and the remaining 2269 acres are mountain pasture, admirably adapted to the rearing and feeding of the Kyloe, or Highland breed of cattle, of which the society have a choice and thriving herd. The verdure and thickness of this mountain pasture—up to the very summit of the range—exceeds any thing of the kind I ever witnessed. Sheltered completely from the western gales, which often commit such fearful havoc on the Sligo coast, it affords both food and protection to cattle during the severest weather; and the little Highlanders may be seen in the depth of winter seeking a genial climate on the very highest ridges of the green Slievh Gauff. We were received and welcomed by the steward, Mr. Lermont—a worthy North Briton—who, with his attentive and industrious wife and two daughters, occupy the farm-house—a neat one-floored dwelling, forming a quadrangular court, and having a capacious yard in the rear, surrounded by cattle sheds, &c. Adjoining the buildings is the model farm, consisting of sixteen statute acres, and where, upon a piece of pure bog, only two years reclaimed, we were shown as fine Swedish turnips as could be found in the fertile barony of Cork. Mangels, rape, and vetches, are also flourishing in the same description of land; and the potatoes we tested in the most practical manner at six o'clock, when they formed an unexceptionable accompaniment to Mrs. Lermont's excellent mountain mutton, Ballina salmon, and Scotch broth."

Such is the animated description of one of the society's farms. Space will not permit us to render justice to the pamphlet, but an extract or two more will suffice to show the value of the institution. Describing still the Gleneask estate, he says—"Proceeding onwards, along a fine wide gravelled road, we catch the plan of the allotments, which are marked out by main open drains and neat green sod banks, from whence, at a short distance, run convenient approaches, planted with alder and Italian poplars. The houses are thirty feet long, thirteen broad, and eight feet high, forming two rooms; they are built of stone, thatched and glazed, and cost the society 16*l.* 5*s.* each. * * * Among the whole of the small holders, occupying together about 1400 statute acres, in farms varying from fifteen to twenty-five acres, not one was without turnips or clover, or both, and frequently rape and vetches in addition. The potatoes were every where excellent; three to six head of cattle on each farm, showed that materials were at hand for the formation of the manure-heap, and evidences of draining, and recent reclamation were equally apparent. The society offer a strong stimulant to the latter operation, giving a prize of 2*l.* for every acre of reclaimed land, which is equal to four years' rent, at the higher rate; but the work once executed with thorough drains, on the improved system, rapidly changes the unproductive bog to a flourishing potatoe field."

Speaking of the Ballinakil estate, the author proceeds—"The Ballinakil estate, when it came into the possession of the society in 1838, yielded no return whatever, and last year the rent received amounted to 137*l.*; the annual receipts of the Gleneask estate in the same period have risen from 41*l.* to 448*l.*; and those of Kilkerrin, since 1842, when it came into the possession of the society, from 500*l.* to 687*l.* The number of tenants on the whole property had increased up to last year from 138 to 237, and the value of their aggregate property from 2416*l.* to 5093*l.*, *being more than double*; 1500 statute acres had been reclaimed by the tenants, and, while the value of the improvements made by the society amounted to 4929*l.*, the value of those executed by the tenants themselves was estimated at 3791*l.* The report for the present year will, doubtless, show a considerable addition to all these evidences of successful progress."

No one who has not seen the state of the land and population, where the labours of the society have not been extended, and witnessed whole tracts waste and unproductive which might thus be made available for the comforts and livelihood of an industrious but famishing people, townlands deserted, vast expanses of reclaimable bog lying untouched, and worse than useless, amid the want and suffering of thousands, and contrasting it with the above details, can form any idea of the magnitude and success of the society's operations. Based on the holiest principles of disinterested benevolence, it has hitherto been blessed with a prosperity, which, if not commensurate with its merits, is still encouraging. We regard it as one of the most decidedly valuable and deserving institutions of the day, and, as such, wish it all success—believing, too, with the author before us, that "it will add to the productions of the soil, to the resources of the country, to the importance of the British Empire, and eventually render Ireland what politicians and philanthropists have hitherto attempted to render her in vain—a prosperous and happy land."

MILLWORK AND MACHINERY.—A Parliamentary return has just been issued, giving an account of the declared value of all millwork and machinery exported from the United Kingdom in each quarter of the years 1841-2-3-4. The declared value of millwork and machinery exported from the United Kingdom in the year ended Jan. 5, 1842, was 551,961*l.*; in 1843, 654,653*l.*; in 1844, 713,474*l.*; and in the year ended 5th January last, 778,187*l.*—showing an increase on every year in the value of millwork and machinery exported.

Transactions of Scientific Bodies.

MEETINGS IN THE ENSUING WEEK.

SOCIETY.	PLACE OF MEETING.	DAY.	HOUR.
Royal Botanic	Regent's-park	Saturday	4 P.M.
Geographical	3, Waterloo-place	Monday	8½ P.M.
British Architects	16, Grosvenor-street	Monday	8 P.M.
Medical	Bolt-court, Fleet-street	Monday	8 P.M.
Medical and Chirurgical	53, Berners-street	Tuesday	8½ P.M.
Civil Engineers	25, Great George-street	Tuesday	8 P.M.
Zoological	11, Hanover-square	Tuesday	8½ P.M.
Society of Arts	Adelphi	Wednesday	8 P.M.
Geological	Somerset House	Wednesday	8½ P.M.
Pharmaceutical	17, Bloomsbury-square	Wednesday	9 P.M.
Royal	Somerset House	Thursday	8½ P.M.
Antiquaries	Somerset House	Thursday	8 P.M.
Rl. Society of Literature	4, St. Martin's-place	Thursday	4 P.M.
Medico-Botanical	32, Sackville-street	Thursday	8 P.M.
Royal Institution	Albemarle-street	Friday	8½ P.M.
Philological	49, Pall-mall	Friday	8 P.M.
Royal Asiatic	14, Grafton-street	Saturday	2 P.M.
Westminster Medical	32, Sackville-street	Saturday	8 P.M.
Mathematical	Crispin-street, Spitalfields	Saturday	8 P.M.

INSTITUTION OF CIVIL ENGINEERS.

FEB. 16.—The PRESIDENT (Sir JOHN RENNIE) in the chair.

The paper read was by Mr. De la Garde, with a supplement by Mr. James Green, M.Inst.C.E. It contained a history of the canal of Exeter from the year 1560, when it was first projected to the present time. In 1563 the Chamber of Exeter engaged John Trew, of Glamorganshire, as their engineer, and under his directions a canal with pound locks, similar in all essential points to those of the present day, was constructed from Wear to Exeter. The depth of the canal at first was three feet by sixteen feet in width; subsequently, at various periods, as the commerce of the city increased, the dimensions were enlarged; and after an arduous struggle, which extended from the year 1563 until 1835, when the Chamber ceased to exist as a corporate body, it succeeded in perfecting a ship canal from Turf, near Topsham, on the river Exe, capable of conveying vessels of 500 tons burthen to the quays of Exeter. The latter work was accomplished by Mr. James Green, whose reports were given, confirmed by those of Mr. Telford. They abounded in interesting illustrations of engineering difficulties, and the method of overcoming them. We may mention one; this was in the excavation for the entrance lock at Turf, which, after being carried to a depth of twenty feet through a stiff alluvial clay without water, was pressed down by the embankment ten feet, and the bottom of the lock-pit rose to a greater height than the sides, exhibiting on its surface peat moss, marine plants, ferns, &c. A complete kerbing or sheathing of whole timber piles was therefore driven, the same being strutted by transverse timbers, and the excavation made, and the lock founded in lengths between the transverse struts; as it was feared the pressure of water from the tide would have a tendency to raise the invert and gate platforms, trunks of elm planking were laid in the rubble masonry forming the bed of the invert, which were carried under and throughout the lock, and terminated in a vertical well beyond the higher gates of the lock; this allowed the sub-water to circulate and rise without obstruction.

This, as well as other ingenious modes of overcoming impediments encountered by Mr. Green was highly applauded. The archæological researches of Mr. De la Garde, and the extracts from old Acts and Charters respecting this canal were of an interesting character, and deserve careful attention, as it must be concluded that this is the oldest canal, with locks, in the kingdom, having been commenced nearly fifty years before the Sankey Cut.

The discussion which ensued drew from Mr. Cubitt a promise of a description of the works and oblique weirs on the river Severn, which have excited so much discussion among engineers.

The meeting was adjourned to Tuesday evening, the 25th instant, when the following papers will be read:—"On the Comparative Advantages of the Atmospheric System," by P. W. Barlow. "An Account of the Ancholme Drainage, Lincolnshire," by Sir John Rennie, President.

BELGIAN ENGINEERING WORK.—It may be in the recollection of our readers, that a short time since a portion of the tunnel of Cumptiel, on the line of railway between Belgium and Rhenish Prussia, gave way, but without causing loss of life. Since that occurrence, the communication between the two countries has seriously been retarded, both from apprehensions on the part of the public, and obstructions created by the recent heavy falls of snow. These circumstances attracted the notice of the Government, who accordingly, a few days since, brought before the Chamber of Representatives a project for substituting an open cut for the tunnel in question, and applied for 300,000f. to carry out that object. It was stated during the discussion, that the falling in of a portion of the tunnel was to be ascribed to the bad quality of the bricks which had been used in the construction, and to the want of sufficient lime thickness in the partition walls. One member demanded the Minister of Works to institute a special inquiry into the causes of the accident, with the view of ascertaining whether there were not sufficient grounds for *prosecuting the engineers*. The Minister, in reply, observed, that Belgian engineers were highly estimated abroad—that they had been engaged in the majority of the German States, where the formation of railways was commenced or contemplated—and that in no foreign railways had more talent or science been displayed than on the Belgian, and that none presented greater prospects or guarantees for safety. The Ministerial proposition was referred to the consideration of the sections, whose report may be expected in about a fortnight. Should it favour the Government project, as is generally anticipated, the entire line, with the new lateral cut, will be re-opened in about a month. The old tunnel will still remain for the convenience of luggage trains, and thus additional facilities be offered both for passengers and traffic.

On Wednesday, the *Rattler* steam sloop, Captain Smith, fitted with the Archimedian screw, and having on board Mr. Smith, the inventor, left Portsmouth, on a trial cruise, with the Royal yacht and *Black Eagle*; the *Janus*, fitted with Lord Dundonald's rotary engine, was, in consequence of her defects being not yet made good, unable to join the squadron. The result will be looked for with great interest, as the screw propeller will now be tested in conjunction with the crack steam-vessel of the navy, the *Black Eagle*, and the much abused and expensive fabric, the Royal yacht. Already have the previous trials of the screw propeller had their results, as we observe that a new first class screw propelled steam frigate, of 520-horse power, is ordered to be laid down in this dockyard, on the plan of Mr. Fincham, master shipwright; the following are the dimensions ordered:—Length, 210 ft.; breadth, 39 ft. 8 in.; depth, 26 ft.; tons, 1453. Also, a 46-gun frigate, with an auxiliary screw of 300-horse power, for a complement of 450 men, of the following dimensions:—Length, 200 ft.; breadth, 45 feet 4 inches; depth, 30 ft.; tons, 1862.

ABRIDGED LIST OF NEW PATENTS FOR FEBRUARY.

G. H. Taunton, Liverpool, civil engineer, for improvements in machinery for revolving windlasses, barrels, spindles, shafts, and for pumping.

Thomas Earl of Dundonald, for an improved rotary-engine to be impelled by steam, and which may be also rendered applicable to other purposes. (Being an extension for the term of fourteen years of letters patent granted to him by his late Majesty King William the Fourth.)

M. J. Roberts, Bryn-y-caeran, Carmarthenshire, gentleman, for improvements in machinery for preparing and winding, and spinning and winding wool, flax, and other fibrous bodies.

J. Johnston, Esq., Willow-park, Greenock, for new and improved processes and machinery for making and refining sugar.

T. Middleton, Loman-street, Southwark, engineer, for improvements in machinery for the manufacture of artificial fuel, bricks, tiles, and other similar articles.

O. W. Barratt, Birmingham, experimental chemist, for certain improvements in the manufacture of acids, and in treating the noxious vapours or gases given off from chimneys and from chemical and other works.

J. B. Gregson, Dunston, Durham, manufacturing chemist, for improvements in the manufacture of Epsom salts and carbonate of lime, commonly called precipitated chalk, parts of which improvements are applicable to other purposes.

J. Quick, Sumner-street, Southwark, Surrey, engineer, for an improvement in steam-engines.

J. Seaward, Canal Works, Poplar, engineer, for certain improvements in steam propelling machinery.

D. I. Green, Villiers-street, Strand, gentleman, for improvements in the means of raising and moving heavy bodies, parts of which are applicable amongst other uses to mines, vessels, and public works. (Being a communication.)

R. B. Longridge, Bedlington Iron-Works, Morpeth, for an improved locomotive engine.

F. H. Maberly, Stowmarket, clerk, master of arts, for certain improvements in machinery or the apparatus for stopping or retarding railway or other carriages, applicable also for these purposes in regard to other engines or wheels.

R. Haworth, Bury, Lancashire, engineer, for certain improvements in steam-engines.

J. Graham, Calvert-street, Middlesex, metal refiner, for improvements in the manufacture of zinc, antimony, and brass, in casting brass, and in apparatus for making pots used in such processes.

S. Hall, King's Arms-yard, Coleman-street, for improvements in steam-engines, boilers, furnaces, and flues, in consuming fuel, preventing smoke, and in propelling vessels.

J. Murdoch, Staple Inn, patent agent, for certain improvements in the manufacture of gas, and in the apparatus employed therein.

R. Oxland, Plymouth, chemist, for improvements in the manufacture of chlorine.

DESCRIPTIVE NOTICE OF THE SILVER MINES AND AMALGAMATION PROCESS OF MEXICO—No II.

By JOHN PHILLIPS, Esq. (Secretary of the Real del Monte Mining Company).*

There are several varieties of silver ores, or ores containing silver, obtained from the Mexican mines—the principal of which are, the sulphuret of silver, muriate of silver, ruby silver, native silver, argentiferous pyrites, and argentiferous galena. Ruby and native silver, argentiferous pyrites, and galena, have been found in Guanaxuato. Zacatecas is rich in the three first of these classes; the Mine of Gallega, in this district, yielded a very large quantity of magnificent specimens of ruby silver. The greater proportion of the ore from the Mines of San Clemente and San Nicolas is argentiferous pyrites, with native silver; the latter mine, especially, has recently produced some extraordinary specimens of native silver, weighing 25 lbs. each. Zimapan produces a considerable quantity of argentiferous galena—this variety, in fact, occurs, though sparingly, in most of the other mining districts. Muriate of silver has been found at Fresnillo, and is still found at Catorce, where the ores also contain bromide of silver. These several varieties, however, bear but a small proportion to the great mass of the silver ores of Mexico, which consists of a grey sulphuret, generally more or less combined with other metals, and disseminated in minute particles throughout the matrix, in most instances composed of quartz, or in intimate connexion with it. By far the largest portion then of the precious metal is obtained in every mining district of Mexico from the sulphuret. The drainage of the Mexican mines was formerly effected by means of malacates, or whims, worked by horses; and this is still the practice in Guanaxuato and Zacatecas, the water being drawn to the surface in *botas*, or vessels made of bullocks' hides. I saw at the mine of Rayas in Guanaxuato some of the largest and best constructed malacates in Mexico, each of them worked by twelve horses. These were driven round at a fast trot, and drew up the bota, which weighed, when full of water, about 1500 lbs., in eight minutes, from a depth of 465 varas.† I may mention here, that the shaft of Rayas is the largest in Mexico, and was made to rival that of Valenciana. It is an octagon 11⅔ varas in diameter, secured with masonry to a depth of about 30 varas from the surface. The total depth is 465 varas; but its diameter is less below than at surface. The shaft of Valenciana is smaller than that of Rayas, being 10 varas in diameter; but its size is said to be preserved for the whole depth of 635 varas. In districts where water was more abundant in the mines, such as Real del Monte and Bolanos, the expense of draining by malacates was very great. At Real del Monte it is said to have amounted to about 60,000*l.* annually; and Sonneschmidt states that at Bolanos he counted nearly 4000 horses and mules employed in moving the malacates, or whims; this last, however, must be an exaggerated statement, or else all the animals employed in the various works appertaining to the mines and haciendas are included, under which supposition the number is still enormous. The mines must be very rich to support so heavy an expenditure for drainage, and it is not, therefore, surprising that they were abandoned when the increasing depth and consequent expenses rendered them no longer profitable. The drainage by adits, or levels, driven from the foot of a hill so as to come deep into the hill upon the vein, has always been practised in Mexico, and important rights and privileges are granted by the Mining Ordinances of New Spain to those who undertake to drive adits. Real del Monte affords the best example in Mexico of this mode of drainage, in the adit undertaken and completed by Don Pedro Terreros, the Conde de Regla. The adit is 2641 yards in length to the point where it intersects the Biscaina vein, and it was afterwards driven upon the vein about 2500 yards more, being altogether about three miles. It entered the vein at the depth of 200 yards from the surface, being considerably greater than that before attained; while, as the adit at once drained the mine, which proved to be very rich, the Conde was left to reap the reward of more than thirteen years' perseverance. Where an adit can be driven on the course of a vein it is a great advantage, as was found to be the case in the instance above-mentioned; the adit having been driven partly on the Santa Brigida vein, the Conde, by his working on this vein alone, extracted about 8,000,000 dollars. An adit of much greater length is now in progress in the same district, but it cannot be completed for a long time to come.

In some mines which have been explored to a great depth, and which are much troubled with water, as in Real del Monte, Bolanos, and Fresnillo, steam-engines have been introduced, and so long as an adequate power is applied, maintain the drainage of the mines without difficulty. At Real del Monte there are at present three pumping-engines in use, one a 75-inch cylinder, one 53-inch, and one 30-inch; the water drawn is upwards of 1000 gallons per minute; there were, until lately, three in use at Bolanos, two of which were 53-inch cylinders, and one rotary-engine. There are two engines at Fresnillo of 60-inch cylinder each, which are soon to give place to larger engines. An engine of 50-inch cylinder has recently been sent to the mine of El Oro. The last mentioned was made at the Rhydymwyn Foundry, in Wales, all the others in Cornwall, and transported to their destinations at an enormous expense. Steam-engines can, however, only be economically applied where fuel is to be easily obtained. The forests of Real del Monte and Bolanos supply wood in abundance; at Fresnillo it is more scarce and dear, but at Guanaxuato and Zacatecas the mountains in the immediate neighbourhood are very bare of trees, and fuel is, consequently, very scarce indeed. It, however, fortunately happens that there is less water in the mines of those districts, so that they can be drained by the malacates in the manner I have before described.

I now proceed to state some of the peculiar features observable in the working of the mines of Mexico, more particularly as regards the payment of the working miner, confining my attention to the mines of Guanaxuato, Zacatecas (including Fresnillo), and Real del Monte; but, as these vary in their plan of operations, it will, I think, be the most convenient arrangement to consider each by itself. It has been seen that the mines of Guanaxuato are situated upon one vein of great length and width.‡ It should be understood that this vein, like all mineral veins, is not productive of silver ore throughout its whole extent, but the ore occurs in branches and bunches, leaving intermediate spaces of dead or unproductive ground; and as an ordinary mine level seldom exceeds six feet in width, it is clear that a level like this would not explore a vein of such dimensions as that of Guanaxuato, while the expense of cross-cutting, as miners term it, would require more capital than the owners of the mine are willing to risk, or able, in many instances, to spare. Hence, there sprung up in Guanaxuato a system of working well adapted to the circumstances noticed, and being based upon the principle, that the hope of reward acts as a stimulus to exertion, has been attended with the best effects, and led to the discovery of some of the richest deposits of ore. This system is called that of the "buscones," or seekers, who are the working miners. These men, at their own risk, work in the mines under certain restrictions, and, following up such indications as may appear to them favourable, oftentimes meet with a valuable course of ore, but frequently work for months, earning scarcely enough for bare subsistence. While thus employed, the buscon receives half the produce of the ore he breaks; and it may be readily conceived that if he should fall in with a rich deposit, his gains would be very large; thus, instances have been known where a man has obtained in this way 1000 dollars or 1500 dollars in a month. The owners of the mine, however, have the option of taking away such a discovery out of the hands of the miner, after a short notice, and working it on their own account—or, as it is termed, hacienda account—when they pay the miner 1 dollar per day each, without any share of the ore. To do this, however, the mine must be rich; and, as it is, a very large portion of the ore in Guanaxuato is raised by the buscones, who divide the produce equally with the owners. The ore being broken and separated as much as possible from the rocky parts underground, is tied up in the "botas" of bullocks' hides, which are drawn to the surface by the malacates, in the same manner as the water. In some of the Guanaxuato mines, labourers are employed to take the ore to the surface, and these will carry on their backs from 2 cwt. to 3 cwt., and perform several journeys in a day from the bottom of a mine 400 or 500 yards in depth. At the mine of Mellado, which I descended to the depth of 400 yards, there is a very excellent double tramroad, constructed under the superintendence of Mr. Russell, on an inclined plane of timber, upon which the ore is drawn up in waggons to a height of 200 varas from the bottom of the mine, where the diagonal joins the perpendicular shaft at about the same depth from surface; each carriage will contain 160 arrobas of 25 lbs. The power applied is that of a malacate working underground; and here at 200 yards from the surface, and shut out from the light of day, one is surprised to behold a storehouse and stabling, with all the necessary appurtenances, for thirty-six horses, employed in moving the machine above-mentioned, nine horses working at a time. Having brought the ore to the surface, it is conveyed to the mine yard, and placed in separate heaps, under the eye of the buscon, or miner, who prepares it for sale. The sale takes place weekly, and is called "rescate," the purchasers of the ore being "rescatadores" who have "haciendas de beneficio," or reduction works of their own. On the day of sale, the miners may be seen in the mine yard busily engaged in laying out their parcels of ore to the greatest advantage, and it is amusing to see them turning the best side of the stone to the spectator. It is seldom, however, that the practised eye is deceived by these expedients; and it is extraordinary how very closely the rescatador will estimate the quantity and value in the heap before him. At a stated time the auctioneer appears, accompanied by a clerk; he walks round to the heaps of ore in succession, and sells them in the following manner:—Standing before the heap of ore to which he invites attention, those who intend to purchase, come forward and whisper into his ear the price they severally offer. When all have done, he declares aloud the name of the highest bidder, and the price, which are entered in a book by the clerk; and the same process is followed throughout until all the ore is sold.

* From the *Railway Register*—the first part appeared in *Mining Journal* of the 11th ult.

† A vara is equal to thirty-three English inches.

‡ Within the last two or three years the mines of La Luz and Asuncion opened upon veins distinct from the Veta Madre, have become very productive; and this has broken the charm which appeared previously to confine the miners' attention entirely to the great vein.

STATEMENT OF THE SELLING PRICE OF MERCHANT BAR-IRON IN LIVERPOOL,

Throughout the Three most remarkable Periods in the history of the Trade.

First Period—1817-23.		*Second Period*—1824-32.		*Third Period*—1835-42.	
1817—February	£8	1824—January	£8	1835—February	£6
March	9	February	9	September	7
July	10	September	10	October	7
August	12	October	11	November	8
October	13	„	11	December	8
1818—February	12	„	13	1836—January	10
April	11	November	12	April	11
May	11	December	13	July	11
June	10	1825—January	14	October	11
August	10	February	15	November	10
September	11	March	14	December	10
December	12	April	14	1837—February	10
1819—May	11	August	13	March	9
June	11	„	12	May	9
1820—March	10	September	11	June	8
June	11	1826—January	11	July	7
1821	9	April	10	August	6
1822	8	May	9	„ 15	7
1823	8	October	10	„ 19	8
		1827—March	9	„ 31	8
		1828	8	September	9
		1829	7	December	9
		1830	6	1838—January	9
		1831	6	December	9
		1832	5	1839—January	10
				May	10
				June	9
				September	9
				1840—January	9
				December	8
				1841—April	7
				1842—January	6
				December	5
				1843—April	5
				June	4

RAILWAY IMPROVEMENTS—STEAM SAFETY DRAG.

We have often felt astonishment that one subject, above all others of vital importance to every branch of the community, has never attracted the notice of those always ready to apply their ingenuity to improvements and invention—and yet, amid all the designs of the day, no single subject is more worthy of earnest consideration, or more interesting to the public, than the one to which we would call attention. Whilst every method has been devised whereby railway travelling could be accelerated, and whereby every principle of science might be applied for that great end—whilst every means have been attempted to facilitate or improve locomotion, we do not remember having seen any notice accorded to discover a plan whereby the engine or the train might easily and suddenly be stopped, in case of any obstruction on the line, or of a person being in advance, or of another train coming down accidentally on the same rail. These cases so frequently—and, despite the greatest caution, must almost necessarily—occur, that, at the same time we wonder no plan has yet been devised to obviate the danger, we are assured that there is no one who will not concur with us in the vast importance of such an invention. Our attention has been turned to a proposition lately suggested for the construction of a *steam drag*, for the purpose of arresting the progress, and stopping an engine and train, sooner than by the means now adopted. The ingenious inventor throws out his observations more by way of suggestions to those better able to accomplish his design. The proposition is, that drags, made equal to about the semi-circumference of the wheels, be connected with the rod attached to the short levers; when it is required to stop the engine, a communication with the boiler and the under surface of the piston, by means of the valve, must be opened; the steam will then press upon and raise the piston, when the long levers will pass over the centre of the piston rod, and the short levers, to which the drags pressing upon the wheels are attached, will be instantaneously depressed. The power of the machine will of course depend upon the size of the cylinder, the pressure of the steam, and the difference in the length of the levers from the fulera. If, therefore, we had a piston to act upon 20 square inches, the length of the levers 8·1, we shall have for a pressure on the wheels, minus friction, a power equal to $20 \times 60 \times 8 = 96$ lbs., or 4½ tons, which may be increased indefinitely. The long levers connected with the piston could be depressed, either by the action of steam on the upper surface of the piston, or by the pressure of the atmosphere, after stopping the communication between the boiler and cylinder, and opening a communication with the cylinder and atmosphere. The proposition appears very simple, and at the same time feasible, and we trust will be taken up by some practical engineer; if brought to completion, there can be no doubt of the advantages it will confer on the public generally.

GOLD MINES OF RUSSIA.—An account has just been prepared of the produce in gold of the washings of the mines in Siberia and other parts, carried on upon account of the Crown and of individuals, from 1830 to 1842 inclusive. In the years mentioned, the total produce of mines belonging to the Crown was 2052 poods (one pood being equal to 36 lbs. averdupois) 16 liv. and 90⅔ sol., and that from the mines of individuals was 4118 poods 31 liv. and 35⅔ sol. The grand total shows the produce in gold of the washings of the mines in Russia to have been in the years mentioned 6171 poods 8 liv. and 30 sol.

THE GASPE FISHERY AND COAL MINING COMPANY.—We observe that the Legislative Assembly of Canada has passed a bill incorporating the Gaspè Fishery and Coal Company, which has enabled the directors to issue their prospectus, and advertise the objects of the company: from this we gather that they purpose to carry out extensive fisheries in the Gulf and River St. Lawrence, sale of timber on the estates belonging to the corporation, sale of coal, sale of land in blocks or small allotments, and the formation of agricultural settlements—the several properties of Bonaventure, Pabos, and Port Daniel, all situated in Gaspè, in Lower Canada. The greatest advantages are held out in the projected fisheries, the locality being one of the most valuable along the coasts of the British colonies in America. The estate of Bonaventure is 66,242 acres in extent, and constitutes one of the finest tracts of land in the province, producing choice descriptions of timber, and combining with this the advantage of a most promising fishery. The estate of Pabos is situated near the Bay of Chaleurs, and comprehends 53,000 acres, with abundant timber and peculiar capabilities for fishing. As respects the Port Daniel coal-field, this property is situated in the immediate vicinity of the harbour of Port Daniel, and comprises 3500 acres of land. The coal-field commences about one mile and a half from the mouth of the river, and extends about four miles in a direct course inland. The coal, after careful investigation, has been pronounced highly bituminous, and suitable for all domestic purposes, as well as steam-engines and manufactories. These appear to us the most prominent features of the company, and the prospects it holds out; in a future Number we shall more fully recur to the subject.

THE YEAR BOOK OF FACTS FOR 1845.—Once again it is our pleasing duty to notice this work, which is always replete with information and research. *The Year Book of Facts* is, indeed, one of those books which form a most agreeable exception to the shoal of motley publications which inundate the public, as being calculated to afford instruction to every class of reader. Not only to the man of science does it offer an invaluable collection of the profoundest artistic information, but to the inexperienced also it presents a simple and concise exposition of the several theories which characterise the inventions of the present day. Science has no greater patron, no abler advocate, than this valuable, though unassuming, work—every line in which tends to further her objects and advance her interests; to the mechanic it is a cheap and never-ending mine of invaluable lore, and to the public generally an important acquisition.

GASPE FISHERY AND COAL MINING COMPANY.

Incorporated by Acts of the Imperial Parliament and the Canadian Legislature.

Capital £150,000, in £1500 shares of £100 each,

The directors having the power reserved to them of raising an additional £100,000; the shares composing such additional issue to be first offered to the existing shareholders at par, in proportion to the number of shares respectively held by each.

TRUSTEES.

The Lord de Lisle and Dudley.
David Barclay, Esq., M.P.
Henry Thomas Hope, Esq.

DIRECTORS.

(Limited by Act of Parliament to six).

Viscount Ingestre, M.P.	Samuel Avory, Esq.
Charles Cuningham, Esq.	Stephen Phillips, Esq.
Richard Norman, Esq.	William Price, Esq.

AUDITORS.

Gurney Barclay, Esq. | John Cuninghame, Esq.

BANKERS—Messrs. Prescott, Grote, and Co.
STANDING COUNSEL—G. A. Young, Esq.
SOLICITORS—Messrs. Amory, Sewell, and Moores.
SECRETARY—Charles F. Ellerman, Esq.

By the Act of Incorporation the responsibility of shareholders is limited to the amount of capital represented by the number of shares standing in their respective names.

The company has been formed for the purpose of carrying out the following objects:—

1. *The Fisheries in the Gulf and River St. Lawrence.*
2. *The Sale of Timber on the Estates belonging to the Corporation.*
3. *The Sale of Coal.*
4. *The Sale of Land in Blocks or Small Allotments.*
5. *The Formation of Agricultural Settlements on the several properties of Bonaventure, Pabos, and Port Daniel, all situate in the district of Gaspe, in Canada East, or Lower Canada.*

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BONAVENTURE.

The first of the three properties here mentioned consists of about 66,242 acres, and is situate in the township of Cox and Hamilton, on the Great Bonaventure River and its tributaries, which discharge themselves into the Bay of Chaleurs. It constitutes one of the finest tracts of land in the district, perhaps in the province, producing on the one hand choice descriptions of timber, and combining with this the advantage of a fishery, which may be carried to any extent.

PABOS.

This estate is situate near the entrance to the Bay of Chaleurs, and is estimated to contain 53,000 acres, more or less; and as in Bonaventure, so in Pabos, the timber is abundant and of excellent quality, while its peculiar capabilities as a fishing station are, as will hereafter be more fully explained, quite unrivalled.

PORT DANIEL COAL-FIELD.

This property is situate in the immediate vicinity of the Harbour of Port Daniel, twenty-seven miles east of Bonaventure, and fifteen miles west of Pabos, and comprises about 3500 acres of land. The sections have been so selected as to secure to the company the exclusive possession of the entire coal-field.

These estates are purged from all seignorial rights, and are held in free and common soccage.

For the purpose of showing the advantages which may be expected to accrue from the purchase of and working these properties with an adequate capital, it will be necessary to go somewhat into detail. The directors will here, however, confine themselves as strictly as it is possible to the limits usually allowed to a prospectus, referring rather to the accompanying appendix for further information as regards the data whereon their estimates of profit are founded.

The objects which the directors have in view have been already stated, and to these they will briefly refer seriatim; and first—

THE FISHERIES.

The fisheries in the Bay of Chaleurs are well known to be the most valuable of any along the coast of the British Provinces in America, not more by reason of the abundance, superior quality, and variety of the fish caught there, than for the great facilities afforded for curing them. Neither on the bay shore, nor indeed along the whole line of American coast, is there a spot at all comparable to Pabos for the establishment of an extensive fishery, for it has within itself every element necessary for carrying on the various operations on the most extensive as well as on the most economical scale. Apart from other recommendations, to be hereafter more particularly adverted to, it may be mentioned, that it has three harbours admirably adapted for small craft, especially that of Grand Pabos. These harbours offer a secure refuge in all weathers and seasons for boats and small vessels, and in these the fishermen are at all times able to land at night the fish caught during the day, which, being immediately prepared for curing on the spot, are ready, whatever may be the quantity, for salting before the morning. Fish thus prepared are greatly superior in quality to those cured on board the vessels—a proceeding which must be resorted to, as is universal with the Americans, where the curing station is at any distance from the fishing ground; and hence, while the price which the former commands in the home and foreign markets is always higher, the cost of production is comparatively greatly less. This must be self-evident—for, while the fishery at Pabos is carried on in open boats, manned by two men only, and within sight of the shore, from whence several trips are sometimes made in a day—the work, under less favourable circumstances in point of locality, is carried on in decked schooners of from 100 to 140 tons burden, manned by a numerous crew, who are generally 100 miles and upwards from their curing station. These schooners remain at sea till loaded, and, to preserve the fish, salt them excessively. From this process, and from the impossibility of drying them, their flavour is greatly impaired, as well as their colour—while it is clear the cost must be far greater than where boats are employed, under the circumstances alluded to.

Flakes for drying the fish can be erected at Pabos at a very trifling expense, for the raw material costs nothing, and is readily attainable from the company's forests; and, when thoroughly cured, they will be sent to Port Daniel for shipment, where it is intended to build stores wherein to house and sort them for the different markets.

There is yet another circumstance connected with Pabos which renders it peculiarly eligible for a fishing station, giving it in fact a decided superiority over every other in the bay—viz., the abundance of bait which can at all times be procured there.* This may appear at first sight a fact so unimportant in itself, as not to be worth notice; yet it forms in reality a powerful element of success—for fishermen are sometimes compelled to come above 100 miles to procure it. The mere cost of taking the bait is trifling; but the waste of time must be great, and proportionately great must be the cost of production of the fish to the stranger, over that of the fishermen of Pabos, who find it on the spot.

LUMBER TRADE.

Bonaventure, exclusive of its capabilities for carrying on the lumber trade on a large scale, commands an extent of coast which will greatly facilitate the fisheries, directly as well as indirectly. To prosecute the fisheries on the most profitable footing wood is indispensable. It is required for building boats, barges, making casks, tubs, &c., and also for exportation to those countries where fish is consumed—as the Mediterranean, the Brazils, the West India Islands, &c. The establishments which have for a long series of years exercised a monopoly over the fish trade possess no mills; and herein, again, a company even preparing their staves only by machinery would have a decided advantage over those who pay the manufacturers' profit, which they must do if made by hand—a difference which may be safely estimated at 30 per cent. on the prime cost of the casks, tubs, &c.—a large item of profit, considering the many thousands annually used.

It has been ascertained, from accurate inspection and survey, that the quantity of timber on the Pabos and Bonaventure properties is immense, while in quality it is scarcely surpassed in Canada. The quantity consumed in the trade and works of the company will be large, and what is not required for these purposes can be readily disposed of. The calculations contained in the appendix will show how this source considerable profits may be safely relied on, taken even, as the direct[illegible] have done, the costs of production at the maximum, and the proceeds at the minimum of probability.

Both at Pabos and Bonaventure are excellent sites for saw mills, with a water power far greater than ever can be required by the corporation.

PORT DANIEL AND ITS COAL-FIELD.

The harbour at Port Daniel is the best within the Bay of Chaleurs, and the only harbour, in fact, on the shore between Gaspé and Dalhousie (a distance of 140 miles) in which vessels can venture to load in the spring and autumn. The approach to it is also more direct than to any other harbour in Lower Canada. There is neither bar nor shoal to endanger the entrance, and the anchorage is good for ships of any burden. Being thus the only safe place of refuge for shipping along so great an extent of coast, Port Daniel, without at present any particular trade of its own, is a valuable possession, irrespective of the coal-field.

Its central situation, in reference to the property of the Corporation, must be productive of advantages which are incalculable. Within its commodious port, vessels of very large tonnage may lie and load alongside the shore with as perfect security and with equal convenience as in one of our own docks, instead of, as is necessarily the case at present with other establishments engaged in the fishing trade, in an open roadstead, where, from blowing weather, weeks are sometimes expended in the operation, to the manifest loss of the shipper from the payment of extra freight and charges, and frequent loss of or injury to the cargo in bringing it from the shore in boats or barges. At Port Daniel, therefore, it is proposed to erect stores for housing the fish, and there also the manufactured timber will be piled ready for export. These articles will be brought from Pabos and Bonaventure in barges, for which an ample provision has been made in the calculation of charges; and one of the advantages of the position of Port Daniel is, that when the wind is foul from Pabos it will be fair from Bonaventure, and *vice versâ*, so that no delay will take place in carrying on the work.

The coal field commences about one mile and a half from the mouth of the river, and extends about four miles in a direct course inland. The coal, after careful investigation, is pronounced to be highly bituminous, and suitable for all domestic purposes, steam-engines, and manufactories; and looking to the large and increasing Colonial demand, and scarcity of fuel which is beginning to be felt in some portion of the United States, particularly that of New York, it may with good reason be expected to yield a considerable and growing revenue to the company.

With a view, however, of investing as small a portion of capital as it is possible in preliminary expenditure, the directors propose to let the coal-field, for a period at least, on lease, receiving from the lessees a royalty on all coal raised, in lieu of rent, and they have the best reason to believe there will be no difficulty in finding parties willing to undertake the speculation.

It will be seen in the appendix, that from the fish trade an annual income

is calculated upon of	£28,233	0	0
From the lumber trade	14,617	10	0
From other branches of trade nothing, for reasons stated in the appendix	nil.		
	£42,850	10	0
Estimated charges per annum	12,000	0	0
Balance of profit	£30,850	10	0

Or 20 per cent. on the capital of the corporation.

Applications for shares must be made to the secretary, at the offices of the corporation, 2, New Broad-street, in accordance with the accompanying form.

A deposit of £10 per share will be required on their allotment; but the acts of incorporation direct that three months' notice shall be given of all future calls, none of which must exceed £10 per share.

FORM OF APPLICATION.

I request you will insert my name as a subscriber for shares in the Gaspé Fishery and Coal Mining Company; and I hereby undertake to accept the same, or any less number that you may allot to me, and to pay the deposit of £10 per share when I may be required to do so.

I am, Sir, yours, &c.,

Name .....
Residence .....
Description .....

Date .....

* Vide *Colonial Magazine*, No. 8, for August, 1844, p. 426.

OFFICES OF THE COMPANY, 63, MOORGATE-STREET, LONDON.

GREAT MUNSTER RAILWAY OF IRELAND.

(PROVISIONALLY REGISTERED.)

FROM TRALEE AND TARBERT, THROUGH LIMERICK DIRECT TO DUBLIN,

TO JOIN THE

DUBLIN AND CASHEL RAILWAY,

NEAR THE TOWN OF MOUNTEATH, IN THE QUEEN'S COUNTY.

Accommodating—in the county of Kerry, the towns of Tralee, Ardfert, Listowel, Ballylongfort, Tarbert, Castle Island, and Killarney.

In the county of Limerick, the towns of Glin, Shanagolden, Askeaton, Adair, Pallas Kenry, Abbeyfeayle, New Castle, Rathkeale, the city of Limerick, and Castle Connel.

In the county of Tipperary, the towns of Nenagh, Cloughjordan, and Roscrea.

In the Queen's County, the town of Borris in Ossory.

Length of line 120 miles.

Capital £1,300,000, in shares of £50 each.—Deposit £2 10s. per share.

No shareholder to be liable beyond the amount of his subscription.

PROVISIONAL COMMITTEE.

(With power to add to their number.)

The Right Hon. Lord Dunalley
The Honourable Francis Aldborough Prittie
John Bayly, Esq., High Sheriff, county Tipperary
Christopher Gallway, Esq., High Sheriff, county Kerry
Henry Watson, Esq., High Sheriff, city Limerick
Richard Uniacke Bayly, Esq., J.P. and D.L., Ballynaclough
Edward Turst Carver, Esq., Marlborough-house, London
Daniel Cronin, Esq., J.P., the Park, Killarney
Michael Furnell, Esq., J.P. and D.L., Limerick
Joseph Griffith, Esq., Roscrea
Kean Mahoney, Esq., Killarney
John O'Connell, Esq., J.P., Grena, Killarney
L. H. Thompson, Esq., Kennington, London
Adam Walker, Esq., J.P., Nenagh

ENGINEERS—Messrs. Leahy, M.I.C.E.L. and D.

SOLICITORS.

Messrs. Johnston, Farquhar, and Leech, London.
P. Ryan, Esq., 33, William-street, Dublin.

SECRETARY AND LONDON AGENT—Edward Billing, Esq.

BANKERS.

Union Bank of London, 8, Moorgate-street, Lothbury; Messrs. Moss and Co., Liverpool. Bank of Ireland; Provincial Bank of Ireland; National Bank of Ireland; Tipperary Joint-stock Bank—and the branches of those banks.

The following are the brokers and agents of the company, from whom prospectuses may be had in a few days:—Mr. Edward Billing, Secretary in London, 63, Moorgate-street, and Albion Chambers, Adam-street, Adelphi; Mr. John Wills, stock and sharebroker, Royal Bank-buildings, Liverpool; Messrs. Geo. Edwards and Son, sharebrokers, Bristol; Messrs. Potter and Co., stock and sharebrokers, Leeds; Messrs. Collinson and Flint, stock and sharebrokers, Hull; Messrs. Cardwell and Sons, Manchester; Mr. Thomas Miller, stock and sharebroker, Edinburgh; and Mr. J. C. Foulds, sharebroker, Glasgow.

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OFFICES OF THE COMPANY, 63, MOORGATE-STREET, LONDON.

CORK AND KILLARNEY RAILWAY, with a FUTURE EXTENSION TO VALENTIA *(Provisionally Registered)*,

FROM CORK TO MACROOM, AND MILLSTREET TO KILLARNEY, WITH A BRANCH FROM MILLSTREET TO MALLOW.

Length of line 68 miles, including the Branch to Mallow.

Capital £700,000, in 14,000 shares, of £50 each.—Deposit £2 10s. per share.

No shareholder to be liable beyond the amount of his subscription.

PROVISIONAL COMMITTEE.

(With power to add to their number.)

Christopher Gallway, Esq., High Sheriff of the county of Kerry
Daniel Cronin, Esq., of the Park, Killarney, J.P.
Kean Mahony, Esq., Killarney
John O'Connell, Esq., Grena, J.P.
Lewis Crombie, Esq., Holles-street, Cavendish-square, London
Alexander Ross, Esq., St. Mary Axe, London.
L. H. Thompson, Esq., Kennington, London

ENGINEERS—Messrs. Leahy, M.I.C.E.L. and D.

SOLICITORS—Messrs. Johnston, Farquhar, and Leech, London.

SECRETARY AND LONDON AGENT—Edward Billing, Esq.

BANKERS.

Union Bank of London, 8, Moorgate-street, Lothbury; Messrs. Moss and Co., Liverpool. Bank of Ireland; Provincial Bank of Ireland; and National Bank of Ireland—and the branches of those banks.

The following are the stockbrokers and agents of the company, from whom prospectuses may be had in a few days:—Mr. Edward Billing, Secretary in London, 63, Moorgate-street, and Albion Chambers, Adam-street, Adelphi; Mr. John Wills, stock and sharebroker, Royal-buildings, Liverpool; Messrs. George Edwards and Son, sharebrokers, Bristol; Messrs. Potter and Co., stock and sharebrokers, Leeds; Messrs. Collinson and Flint, stock and sharebrokers, Hull; Messrs. Cardwell and Sons, Manchester; Mr. Thos. Miller, stock and sharebroker, Edinburgh; Mr. John M'Donnell, 12, Academy-street, Cork; and Mr. J. C. Foulds, sharebroker, Glasgow.

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PARIS AND ST. QUENTIN RAILWAY COMPANY,

HAVING ITS

JUNCTION ON THE GREAT NORTHERN RAILWAY AT CREIL.

Capital 35,000,000 fr., or £1,400,000, in 70,000 shares, of 500 fr., or £20, each.

Deposit 50 fr., or £2 per share.

PROVISIONAL COMMITTEE.

Grantees Commissionaires.

Mons. J. Cordier, Member of the Chamber of Deputies.
Mons. Le Marquis Henry de Dion, landed proprietor (propriétaire).
Mons. Kysaeus, jun., banker, Paris.
Mons. A. H. Neville, civil engineer, Paris.
C. W. Graham, Esq., merchant, London.

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Mons. Mujias, landed proprietor (propriétaire).
Mons. de Beaupuy, landed proprietor (propriétaire).
Sir Joshua Walmsley, director of the Chester and Birkenhead Railway, &c.
William Jackson, Esq., chairman of the Chester and Birkenhead Railway, &c.

BANKERS.

Messrs. Kysaeus, jun., and Co., Paris.
Smith, Payne, and Co., London.
Bank of Liverpool, Liverpool.

ENGINEER.

J. M. Rendel, Esq., F.R.S., Vice-President of the Institute of Civil Engineers.

SOLICITOR.

W. Borrodaile, Esq., 20, King's Arms-yard, London.

Prospectuses and forms on which to make the application for shares are now ready, at the temporary offices of the company, 20, King's Arms-yard, London.

P.S.—No applications for shares will be attended to except on the above-mentioned forms.

PARIS AND LYONS RAILWAY (Lafitte's Company).—

The provisional committee of the Paris and Lyons Railway Company beg to state, for the information of their proprietors, and in reply to numerous inquiries, that the only line of railway to Lyons is that adopted by the Government, for the working of which this company has been for more than two years in a position to tender.

In the event of the Government determining to lease the railway, on the condition of the lessees executing the earth works, a considerable increase in the capital will be speedily required.

Further particulars respecting the distribution of the new shares will shortly be announced.

By order,
ED. AIME, Secretary.

62, King William-street, Feb. 17, 1845.

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PARIS AND LYONS RAILWAY (C. Laffitte's Company).

—Notice is hereby given, that, in conformity with the terms of the report and circular, addressed and sent by the English directors to each of the shareholders in August last, the subscribers for the shares mentioned at foot are understood to have withdrawn from the undertaking, and the deposits paid upon their letters of allotment accordingly remain in the hands of the English directors, subject to the order of the respective parties—viz.:

Allotment Letter, No.	42	for	30	shares.—Deposit	£60
,,	43	,,	50	,, ,,	100
,,	121	,,	50	,, ,,	100
,,	131	,,	50	,, ,,	100
,,	284	,,	10	,, ,,	20
,,	389	,,	150	,, ,,	300
,,	391	,,	50	,, ,,	100
,,	393	,,	20	,, ,,	40
,,	411	,,	75	,, ,,	150
,,	427	,,	25	,, ,,	50
,,	558	,,	40	,, ,,	80
,,	569	,,	60	,, ,,	120
,,	584	,,	25	,, ,,	50
,,	585	,,	20	,, ,,	40
,,	637	,,	100	,, ,,	200
,,	694	,,	50	,, ,,	100
,,	698	,,	100	,, ,,	200
,,	705	,,	60	,, ,,	120
,,	787	,,	50	,, ,,	100
,,	788	,,	10	,, ,,	20
,,	798	,,	40	,, ,,	80
,,	845	,,	50	,, ,,	100

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The English directors anticipate the possibility that their report and circular may not have reached some of the shareholders, and will be ready in any such case on or before the 28th inst. to entertain an application by a shareholder to remain in the company. In all other cases they invite a communication from the parties interested in the above deposits, and their directions as to the repayment of them.

By order,
ED. AIME, Secretary.

London, 62, King William-street, Feb. 6, 1845.

BORDEAUX, TOULOUSE, AND CETTE RAILWAY

COMPANY.—The LETTERS ALLOTTING the SHARES in this company have this day been distributed.—The provisional directors beg to intimate to those applicants for shares who may not have received answers to their letters, that they have been unable to include them in the apportionment, and to express their regret that they have not had it in their power to satisfy all the applications.

By order,
C. T. BEKE, Secretary.

31, Lombard-street, Feb. 19, 1845.

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STRASBOURG AND PARIS RAILWAY.

Capital 60,000,000 fr., or £2,400,000, in 120,000 shares, of 500 fr., or £20 each.

Deposit £2 per share.

Prospectuses will be duly issued; in the meantime applications for shares may be addressed to the provisional committee, at the office of their solicitor, George Ogle, Esq., 4, Great Winchester-street, Broad-street, London.

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APPRENTICE—JOURNAL OF MECHANICS'

INSTITUTE AND GENERAL EDUCATION, with which the INSTITUTE is now INCORPORATED, weekly price 1½d.—The design of this work is to diffuse among youths and persons of imperfect education the most useful and interesting information in the broad domain of science and literature; to give weekly, in the form of reviews, the essence of the best works lately published, and to set before those starting on the highway of life the precautions necessary to success, and, by the observance of which, they will be sure to rise in the world.—OFFICE, WELLINGTON-STREET NORTH.

33

ARMAGH, COLERAINE, AND PORTRUSH RAILWAY.

—Notice is hereby given, that NO FURTHER APPLICATION for SHARES can be received.

THOS. W. YOUNGHUSBAND, } Secretaries.
WILLIAM GALT, }

4, Great Winchester-street, Feb. 21, 1845.

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LONDON AND BLACKWALL RAILWAY COMPANY.

At the Half-Yearly General Meeting of this company, held on Thursday, the 20th day of February inst., at the London Tavern, Bishopsgate-street,

JAMES NUGENT DANIELL, Esq., in the chair,

It was resolved unanimously,

That the report of the directors, together with the statements of accounts annexed thereto, be received and adopted.

That a dividend be now declared, and that the same be made after the rate of 3s. per share, clear of income tax, upon the 48,000 shares held by the members of this company in the joint-stock thereof, payable on and after Saturday, the 15th day of March next.

That Joseph Bishop, Esq., be re-elected a director of this company.

That Dr. Bowring, M.P., be elected a director of this company.

That William Edmund Ferrers, Esq., be elected a director of this company.

That David Ogilvy, Esq., be elected an auditor, in the room of Dr. Bowring.

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That the warm thanks of the meeting be given to the chairman and board of directors for the zeal and ability they have manifested in conducting the affairs of the company.

NORTH BRITISH RAILWAY.—Notice is hereby given, that

the directors of the North British Railway Company have made another CALL of TWO POUNDS TEN SHILLINGS per share upon the stock of the company, payable at the Royal Bank, the British Linen Company, and the National Bank, the company's bankers here, on the 10th day of March, 1845.

For the convenience of shareholders in England, receipts for the call will be sent to the company's bankers in London and other parts of England, of which Notice will be given to the registered shareholders.

Interest, at the rate of 4 per cent. per annum, will be allowed on calls and subscriptions paid in advance, from the date of their being paid until the line is open to the public.

Interest, at the rate of 5 per cent. per annum, will be charged on all calls in arrear, and no interest "shall accrue to the proprietor of any shares upon which any call shall be in arrear in respect of such share or any other share to be holden by the same proprietor during the period while such call shall remain unpaid."

The first payment of interest to the shareholders will be made on the 15th of May next.

By order of the directors,
JOHN LEARMONTH, Chairman.
CHAS. F. DAVIDSON, Secretary.

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18, St. Andrew-square, Edinburgh, Feb. 12, 1845.

GREAT WESTERN AND CORNWALL JUNCTION RAILWAY COMPANY.—London, Salisbury, Exeter, Plymouth, and Falmouth

Railway Company.—The promoters of the Great Western and Cornwall Junction Railway Company have determined to apply in the present session of Parliament for an Act to construct the line proposed by them with certain modifications. Notice is hereby given to persons who have applied for shares in the first-mentioned company, that an Amended Prospectus has been issued, and that their APPLICATIONS must be RENEWED, in accordance with the form to be appended thereto.

The shareholders of the late London, Salisbury, Exeter, Plymouth, and Falmouth Railway Company are hereby informed, that all shares on which the partial deposit of 5s. shall not be paid to the bankers of the company on or before the 24th of February, (the further deposit of £1 to be paid at the same time as the deposit on the shares of the company shall be required,) under the terms of the amended prospectus, will be precluded from the benefit of the agreement for the exchange of the shares of that company.

A reserve of shares has been made for local interest.

The amended prospectus will be issued at 15, Old Jewry-chambers, and may be had on application to Messrs. J. Shewell and Son, Token-house-yard, London; Messrs. Pender, Genn, and Genn, solicitors, and Mr. John Ellis, sharebroker, Falmouth; Mr. Corfield, Penryn; John Ferris Benallack, Esq., solicitor, Truro; Christopher Wallis, Esq., Bodmin; Messrs. Darke, solicitors, Launceston; Messrs. Burd and Son, solicitors, Okehampton, Devon; R. T. Head, Esq., solicitor, Messrs. Beaumont and Langworth, and Mr. Gleddon, sharebrokers, and Mr. Charles Dean, surveyor, Exeter; Charles Bayly, Esq., solicitor, Frome; Mr. Stokes, sharebroker, Cheltenham; Mr. Luke Arnold, sharebroker, Bristol; Messrs. Parsons and Townley, and Mr. Charles Pownall, jun., Liverpool; James Pearson, Esq., sharebroker, Birmingham; Messrs. Ridsdales and Mr. James Jamieson, Leeds; Mr. Harvey, sharebroker, Halifax; and Mr. Adam Stark, Gainsborough.

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R. MOORE, Secretary,
Great Western and Cornwall Junction Railway Company.

15, Old Jewry-chambers, London, Feb. 13, 1845.

Just published, by R. H. Laurie, 53, Fleet-street, London,

A GEOLOGICAL MAP OF THE COUNTY OF CORNWALL,

divided into Hundreds, with the Rail and other Roads, &c.—Reduced from the Grand Trigonometrical Survey, with the locality of mines.—On one large sheet of paper, price 12s.; or mounted on cloth and rollers, varnished, 20s.

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ROYAL CORNWALL POLYTECHNIC SOCIETY.

PREMIUMS FOR 1845.—NOT CONFINED TO THE COUNTY.

It should be understood that these Premiums will not be awarded, unless the Judges consider the Essays, Models, &c., of sufficient merit to deserve this mark of approval.

A premium of Ten Pounds, by the Society, for the best experimental examination of any of the elements of the steam-engine—a knowledge of which may indicate the relative value of the different improvements which have been of late made in the engines of Cornwall.

Two premiums, by the Society, of Three Pounds and of Two Pounds, for the two best and most accurate details of any recent luminous or vaporous appearance, or emanations from the earth, in the vicinity of mines or mineral veins.

A premium of Ten Pounds, by W. T. Praed, Esq., M.P., for the best chemical or mechanical method of ventilating mines, that can be applied to the Cornish mines with advantage.

A premium of Ten Pounds, by J. H. Tremayne, Esq., for the best available method or improvement on the plan already adopted at Tresavean for facilitating the ascent and descent of miners.

A premium of Ten Pounds, by T. J. A. Robartes, Esq., for the plan or model which obtains the above premium, provided it be accompanied by such estimate of expense as shall be approved of by the judges.

A premium of Five Guineas, by John Taylor, Esq., F.R.S., for the most complete and accurate accounts of the quantity of water supplied to the boilers, the number of bushels of coals consumed, and the duty performed by an engine, for a period of not less than six months.

A premium of Ten Pounds, by Major Jenkins, of Assam, in India, for the best essay on the several descriptions of fishing boats used on the coast of Cornwall, and in the Scilly Islands; with particular advertence to their manageableness and capacity, and their good qualities under oar and sail, their adaptation (particularly as to safety) to their respective fisheries. To be accompanied by drawings or models.

A premium of Five Pounds, by Henry English, Esq., Editor of *The Mining Journal*, for the best paper containing an account of any methods, or plans, practised in any other mining districts, advantageously applicable to the Cornish mines. To be accompanied by the necessary drawings.

A premium of Ten Pounds, by Lieut.-Colonel Sykes and Sir C. Lemon, Bart., for the best report on the agricultural produce of any considerable portion of any Union in the county of Cornwall, in one of the years 1842, 1843, or 1844.

A premium of Ten Pounds, by the Society and H. English, Esq., for the most accurate account of the quantity of water, found at different depths, in the mines of this county, with a view of ascertaining if the quantity of water increases with the depth or otherwise.

A premium of Five Pounds, by Sir C. Lemon, Bart., M.P., for the best paper on the fisheries of Cornwall, or of any port of the county.

A premium of Five Pounds, by the Society, for the best design of a detached cottage, or cottages, *to be built by the poor*—regard being had to the material usually found in the mining or rural districts, to the habits of these classes of the population, and to the economy of the construction.

A premium of Ten Pounds, by the Society, for the best practical method of obviating the corroding effects, produced by solution of copper and other substances in the *feed and injection water*, on the boilers, and other parts of the steam-engines used in Cornwall.

A premium of Seven Pounds, by the Society, for the best account of the space passed through by the piston of any pumping-engine in Cornwall (not less than 50-inch cylinder), for a period of six months; together with an account of the space passed through by the piston, as shown in the published monthly reports, and the probable causes of difference.

A premium of Three Guineas, by Charles Fox, Esq., for the best analysis of the air taken at the termination of a *core* of two men, from the extremity of one mine level in granite, and of another in killas.

Three premiums, by Charles Fox, Esq., the first of Seven Guineas, for the most concise examination of every steam-boat engineer, which will tend to elucidate the knowledge of the person under examination, so as to place beyond a doubt the candidate's capability to undertake a charge of such great importance, either on short or long voyages. The second premium, of Five Guineas, for the second best; and the third, of Two Guineas, for the third best.

A premium of Twenty Pounds, by Major Jenkins and Messrs. G. C. and R. W. Fox and Co., for the best method of enclosing pilchards in deep water, and securing them in a state fit for curing—such methods to be in actual operation.

A premium of Two Guineas, by John Allen, Esq., for a treatise which shall point out the best available remedy for the great loss of property often sustained by individuals of the labouring class, and by the community, through the want of employment for them, agricultural as well as manufacturing; and which shall recommend a practicable method for rendering that property or labour, now so often wasted, to a very great amount, by those who can worst afford it, available to the benefit of the owners or labourers, and to the public weal.

A prize of a handsomely bound copy of *Mill's Logic*, is offered by J. Salusbury Trelawny, Esq., M.P., for any *new discovery in science*, accompanied by a statement of the steps by which the certainty of the discovery was rendered evident.

The following Premiums, by the Society, for persons under eighteen years:—

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A premium of Two Guineas, for the best filled sketch-book, from Nature.
A premium of One Pound, for the best pencil drawing of a landscape, from Nature.
A premium of One Pound, for the best water colour drawing, from Nature.
A premium of One Pound, for the best pencil or chalk head.
A premium of One Pound, for the best architectural drawing, after a building in the county.

School Premiums for 1845:—

A premium of Two Guineas, for the best map, which shall include the most extensive and accurate series of any recent maritime or inland discoveries.
A premium of One Pound, for the best perspective outlines, with illustrations.
The Lander Prizes as usual.

The society being desirous of encouraging excellence of workmanship in the handicraft trades, will place at the disposal of the judges a certain number of prizes, to be awarded to tradesmen and artisans.

No person shall be entitled to a prize for any article which has been patented or registered, or of which a description has been published, or for which a premium has been obtained from any other society, nor for any article brought to a previous exhibition, unless some improvement has been made therein; and in the department of the Fine Arts, the pictures, &c., must have been executed within the twelve months preceding the time of the exhibition.

All inventions and improvements must be accompanied by *accurate models, or drawings, with full and explicit descriptions*, so that the judges may be enabled, without difficulty, to ascertain the merit of the productions.

Any other information respecting the society may be had on reference to the secretary.

Any communications of general interest will, if approved of by the committee, be immediately printed by the society, and circulated without delay.

ROBERT HUNT, Secretary, Falmouth.

STEAM-ENGINES, from 8 to 16-horse power, ALWAYS in STOCK.—Apply to Mr. Capper, engineer and ironfounder, Birmingham.
Price.....£12 *per horse.*
N.B.—CASTINGS AND PIT WORK MADE TO ORDER. 40

MINING SHARES.—A FEW ORIGINAL SHARES remain to be APPROPRIATED in some valuable LEAD and COPPER MINES, the reports of which, as well as all necessary particulars, may be known on application to Mr. Thomas, 14, Poultry, London. 41

OFFICE FOR PATENTS, 7, STAPLE INN, HOLBORN.
J. MURDOCH (successor and late assistant to Mr. Hebert) informs INVENTORS and PATENTEES, that at his OFFICE they can obtain
REFERENCE TO A CLASSIFIED LIST OF PATENTS,
(THE ONLY ONE EXTANT), which shows at one view all the Patents ever granted for any particular object, whereby they may save much trouble and expense, and procure information not otherwise obtainable. BRITISH and FOREIGN PATENTS OBTAINED. And USEFUL and ORNAMENTAL DESIGNS REGISTERED.
SPECIFICATIONS carefully prepared, and REPORTS of ENROLLED SPECIFICATIONS furnished on moderate terms.
FINISHED and WORKING DRAWINGS executed with accuracy and despatch. 42

NOTICES TO CORRESPONDENTS.

THE TARIFF.—Thanks to friends in Cornwall. We are not asleep; yet it is well that our correspondents should know that we are wakeful. There is an old saying—"Do not show your teeth until you can bite."

We should be glad to receive some particulars for publication from our Liverpool friend, who addressed us respecting the prices of metals.

The papers on Railway Engineering will be acceptable.

We have no wish needlessly to encounter expensive legal proceedings, which would inevitably follow the publication of the statement respecting the Olmstead Stove Company.

J. P. (Paris).—The papers have been regularly transmitted from our office—consequently, the cause of irregularity in their receipt cannot rest with us.

A Constant Reader (City).—We are obliged to our correspondent for his attention.

We will endeavour to comply with the wish of "A Miner."

G. W. (Upper Thames-street).—We are extremely obliged to our correspondent for his polite note—and the intelligence it is evidently in his power to furnish will at all times prove most acceptable,

The Naval and Military Gazette should have acknowledged the source from whence they obtained their information, when transferring our announcement of the intended experimental cruise of the *Rattler, Black Eagle*, and Royal yacht.

THE MINING JOURNAL
Railway and Commercial Gazette.

LONDON, FEBRUARY 22, 1845.

Will our readers look over the Journals of the past few weeks, recording Mine Accidents, and then withhold their support to an application to Parliament? We fear it will be of little use; but does not humanity claim of them some effort?

The report of the proceedings in the Talacre case, which appears in our columns of to-day, will, we feel assured, be perused with pleasure on the part of all who have alone in view honesty and straight-forwardness of purpose. It is now determined by the verdict of a jury of twelve men, that a conspiracy existed, and on the proof of which they gave their verdict for the defendant.

It is not for us to express any gratification on the circumstance of the worthy Alderman THOMAS WOOD being thus pronounced a party; we have only warred with him on principle An important point is, however, gained, that of establishing, by the verdict of the jury, the designs perpetrated by the concoctors, directors, trustees, and solicitors of the scheme; and releasing those individuals who innocently embarked their money, from the unjust claims set up by Messrs. HOWARD, LEVASON, Ald. T. WOOD, his respected friend and co-partner, J. DAVIS, Esq., Mr. ex-Deputy WESTON, and others.—The report will be found to enter so fully into the merits (or, perhaps, we should rather say, the demerits) of these worthies, that naught but a passing remark is necessary.

The Ministerial measure as regards the alteration in the Tariff has of course met the sanction of Parliament—for who cares for the miner? With shame be it said, neither Sir CHARLES LEMON, Mr. PENDARVES, or any other Representative of the county of Cornwall—save and except Mr. TURNER, whose point we feel some difficulty in arriving at—stood up to support the interest in the mines of the county which returns them. A meeting will be held at Redruth during the ensuing week, on subject of the withdrawal of the duty imposed on tin, manganese, blende, and other ores, which, by the amended measure of the Minister, has been taken off.

We last week gave the smelters' Memorial, and did purpose giving some remarks in our present Number, as also some "facts and figures;" but we wish to render them more perfect—and, having been promised statistical details by friends in the County, we think the better course is to be quiet for a week. In the mean time, we court information, and feel that we shall be in a position ere many days elapse to establish a case, which, although it may not alter the Minister, should shame him, if he possesses any sense of honesty, or love for his country. Cornishmen! You have the wolf in sheep's clothing—act and judge for yourselves.

The Miners' Widow and Orphans' Fund progresses as we could wish. The communications received, and the promises of support, are truly gratifying, and assure us that our efforts are neither disregarded, nor are they ill-requited. We hope within a few days to report the result of our communication with the Poor Law Commissioners, who, if they are wise, will listen to our counsel; and, once having determined the matter with them, we shall with heartfelt pleasure again visit the County, to carry out an object, which has not only our sincere best wishes, but we believe is responded to by "One and All."

We last week briefly recorded the result of the action PATTESON and others *v.* HOLLAND and others, being for an alleged infringement of patent for Galvanised Iron, which is understood as being that metal coated with zinc, and thus preventing it from oxidation. In our present Number we have given the report at greater length, confining ourselves, however, to the main points put forward, for it would be perfectly impracticable to give even a digest of the evidence adduced by the plaintiffs—the defendants, who, we are given to understand, had upwards of a score of witnesses, not calling one, but resting their case on the cross-examination of those produced on the other side. In adverting to the question at issue, we are influenced by the importance to be attached to patents which involve points simple in themselves, but of so much importance as considered with reference to the public. The object of all patents is to afford a more ready and cheap application of manufacture or creation of an article than by the ordinary means, and the patentee naturally looks for a reward for the ingenuity he has displayed, or the cost and labour he has devoted to the production and accomplishment of the object in view; but, unfortunately, too many instances present themselves of infringement, by parties who avail themselves of the abilities of others. It were needless to enter on this point at length, or we might advert to NEILSON'S patent for the hot-blast, CRANE'S anthracite iron, ANDREW SMITH'S wire rope, and many others, where thousands of pounds have been expended in law—while the question in itself was so simple as to be understood, and could be determined, by any person of common understanding.

To return to the matter under notice. A few words will suffice to show that a jury, however well composed, will stultify themselves in their verdict, and more especially when the learned Judge does not comprehend the question, and it is too much to expect, that, in laying down the law, he should, at the same time, also define the laws of chemistry or metallurgy. In the present instance, we have a verdict which proves that the jury did not well understand the question submitted to them, on which they were called upon to give their verdict. A brief review of the case will, we think, render this pretty clear. A patent is taken out by the plaintiffs, in 1837, for galvanising iron—that is to say, by dipping iron into zinc, with which it is coated, sal ammoniac being used in the manipulation, and which is allowed to float on the surface or in the bath. The defendants, it appears from the evidence, had taken out a patent subsequently for coating iron with zinc—but, in so doing, had introduced a covering of the iron in the first instance with tin, so as to destroy the action which appears to be injurious to the two metals when coming into immediate contact—the tin forming a thin coating, and thus intercepting the action which would arise from the combination of the iron and zinc—the patent, as we understand it, being that of coating the iron by precipitation in an aqueous solution, the chloride of tin being deposited by galvanic action.

It is not our intention to enter into details as regards the merits of the patent of HOLLAND and others, the validity of which has not been mooted; but the verdict given by the jury, invalidating that of PATTESON'S, and the nature of the evidence, calls for a passing remark. In the first place, the process, which appears by the specification to be founded in some measure on its application by means of a reverberatory furnace, has never been attempted—while Mr. BRANDE (a gentleman well known in the chemical and scientific world), in his evidence, stated that the process of the plaintiff was perfectly novel—that he considered it a new invention, iron never having been coated with zinc or any other metal antecedent to the patent. But what was the surprise of the scientific gentleman, when a volume, entitled the *Manual of Chemistry*, edited by himself, and published some ten or twelve years back, was placed in his hands, in which it was stated that iron had been coated with zinc some forty or fifty years ago. So much for scientific witnesses.

We must needs draw our observations to a close. The jury brought in a verdict in favour of the plaintiffs on the first count—viz., that the defendants had infringed the patent; on the second, that the patent of PATTESON (or CRAUFORD) was valid, inasmuch that the infusion of sal ammoniac was novel; and on a further count, which applied directly to the specification, the jury determined by their verdict, that it was not practicable for any one to work the patent as specified! The trial, which occupied three days, and must have been attended with something like three thousand pounds cost, or *one thousand pounds per diem*, was brought to a close by a verdict given on four counts for the plaintiffs, and one in favour of the defendants—the latter over-ruling the other four. Thus much for law, while it is to be lamented that parties should thus be subjected to costs, for it is not in all cases that they possess the power of "forking out."

We regret very much that the influence of the Board of Trade will, in all likelihood, be deeply affected by the recent discussions in both Houses of Parliament on railway matters. There never was a time in which the interests of the country required, on the part of the executive, more decision and firmness than at present; and we should consider it most unfortunate if, through any cause, the Board of Trade should lose the confidence of the public, and their reports not meet with that general approbation so necessary to carry out the objects for which the Board itself was instituted.

Let us look for a moment at the situation in which the country is placed, and we think that there can be but one opinion as to the necessity of a strong check being placed on that wild speculative spirit, which in times like the present, when there is a great superabundance of unemployed capital, would, if unrestrained, lead to the the most disastrous results. There have been, it appears, no less than 248 railway schemes not only brought out, but the required amount of capital subscribed for, as to enable the projectors to submit them to the Board of Trade. What could the prosecution of the one-half at least of these projects produce but utter ruin to the parties concerned, and a repetition of the frightful scenes that took place in 1825? Many Members of the House of Commons, we are sorry to say, are but too ready to join in full cry against what they are pleased to call railway "monopoly"—there never was a term more abused, or less understood; the evils in the railway system may be safely left to public opinion to deal with; it was but a few days since that the chairman of the Great Western, at the half-yearly meeting, announced that the second class carriages, as well as the third, should be entirely closed, and that the fares should be reduced. Now, the Great Western has been held up, and not without reason, as the most impervious of any company in the kingdom to public opinion, and yet it is obliged to bow to it, and acknowledge that it has a power, which no strength can grapple with, nor cunning evade. What, then, would the public gain by competing lines?—absolutely nothing, or worse than nothing, for the fares would have to be raised, when the traffic would become divided, to enable the railway proprietors to pay even a small dividend on their invested capital. We fear that no inconsiderable number of honourable Members are too apt to confound sound with sense; and so much charmed with the word "competition," as utterly to forget the proper sense in which it should be applied. The great crime of the Board of Trade in the eyes of these gentlemen consists in their adopting a Conservative policy—of preventing old lines from being ruined, whilst the projected new lines would neither afford additional accommodation to the public, nor carry passengers at a lower rate.

The railway fever has now considerably abated, the price of old shares is somewhat lower, and capitalists are looking with increased confidence to investing in the new Irish lines; great caution, however, should be exercised with regard to some of them. The line from Derry to Coleraine, if the projectors succeed, will be of the greatest benefit to that part of the country, but we have great doubts if it can ever pay. The tide of public favour, however, is strongly setting in towards the northern lines, and, for the greater part, with good reason; the country in general is flat, and the population very dense; the people, also, are more industrious, orderly, and wealthy than those of the south. The Belfast Junction Line is at a high premium, and the *bona fide* applications for shares in the Armagh, Coleraine, and Portrush Line, which will, in fact, be a continuation of the Belfast Junction Line, exceed, we understand, four-fold the number of shares at the disposal of the Committee. This line will be probably one of the best paying in Ireland.

Our attention has been directed to an advertisement, inserted in several of the papers within the last fortnight, and headed "Dublin Belfast, and Coleraine Junction Railway," and a "Provisional Committee" is named, without a single mercantile name that any one knows anything about. Some think it an opposition to the Belfast Junction Line, others that it is to oppose the Armagh, Coleraine, and Portrush Line. Some cannot make out where it it is to begin, while others are in still greater difficulty where it is to end; but we believe it is generally thought to be a hoax.

In a letter from a correspondent, our attention is directed to the fact that the "noblemen and gentlemen, deeply interested" in scheme No. 2, have entirely disappeared from No. 3! We suppose "The Dublin, Belfast, and Coleraine Junction" can take a hint.

We are informed that a contract has been entered into for the construction of engines of improved arrangements, of such power and dimensions as will perform the distance between Manchester and London with the most perfect safety in six hours, or at the rate of forty miles per hour. This information we have from the most unquestionable source, and may be relied on as perfectly correct. We need offer no comment on the immense advantages arising from this additional facility to transit between the metropolis and such a district as Manchester. All must applaud the spirit of the promoters of this important object, and, as they have so consulted the interests of the public, we trust they will not be themselves deprived of commensurate pecuniary advantages.

THE IRON TRADE.

All our advices still continue to represent the cheering revival which this trade has experienced within the last few weeks, and, at the same time, prospects of a far greater advance are confidently held out. This expectation is founded chiefly on the growing consumption of that article for cases in which it was hitherto unappropriated—thus the buildings of iron roofs, houses, and fire-proof fabrics have required in Liverpool alone upwards of 20,000 tons of cast and wrought metal during the last year; and 25,000 tons of plate and angle iron is now actually in use for the construction of iron ships and steam-boats.

A great demand has also been created abroad for foreign machinery of every kind. But the chief cause to which this encouraging increase is to be attributed is the vast extension of railways, and the number now in progress, certain of completion in a few years. If the quantity can be procured, iron will be wanted, at a low calculation—

In Great Britain and Ireland, for	2000 miles.
In Prussia and Germany	2500 „
In France	1600 „
Russia and the rest of Europe	1500 „
Total	7600 „

This, at 300 tons per mile, will alone require 2,280,000 tons of iron; and if the atmospheric principle be adopted, the quantity will be more than doubled. It appears that the Germans, anticipating the demand in England, and her probable inability to meet it, have turned their attention to their own resources. Already they have proved their ability to compete with us in the construction of machinery, and their power of casting iron has arrived almost at perfection.

RAILWAY PROGRESS.

A slight pause in the striking progress of railway speculation has become visible during last week. This is not to be regretted—a wholesome caution at the present moment is particularly useful; it may be the best means of checking the reckless gambling in the share market; and while, therefore, investment is equally safe, and the prosperity of every branch of railway department equally gratifying, a sensible decline, not in the price of shares, but in the spirit of illegitimate enterprise, is very acceptable. Still a good deal of steady business has been done by *bona fide* traders, and, in some cases, the outlay has been considerable. The Birmingham and Gloucester continues rapidly progressing; last half-year's dividend was 1*l.* 5s., the present 1*l.* 17s. 3d.; the price of the shares was last month 97*l.*, the present 135*l.* The Eastern Counties have also materially increased in every respect; the dividend from 16s. per cent., has risen to 2*l.* 5s. 8d.; and the prices in the month from 14*l.* to 17½*l.* The Grand Junction shows a rise from 216*l.* to 219.; the Great Western from 141*l.* to 180*l.*; the Liverpool and Manchester from 208*l.* to 213½*l.*; the London and Birmingham from 219*l.* to 237*l.*; the London and Brighton from 47½*l.* to 55½*l.*; the Manchester and Birmingham from 51*l.* to 66*l.*; the Manchester and Leeds from 113*l.* to 138*l.*: the Midland from 109*l.* to 126*l.*; the Sheffield and Manchester from 97*l.* to 105*l.*; and the York and North Midland from 104*l.* to 105*l.* Thus, it will be seen that the prospects of these various companies are highly promising, and so long as such favourable results appear, any check in wild speculation, we shall hail with sincere satisfaction. The following is the increase in the traffic receipts of the various railways for the first seven weeks of this year, as compared with the corresponding period of last year:—

Birmingham and Gloucester	£2489	London and Croydon	£1093
Chester and Birkenhead	486	Manchester and Birmingham	3025
Eastern Counties	2361	Manchester, Bolton, and Bury	575
Edinburgh and Glasgow	1711	Manchester and Leeds	5142
Glasgow and Greenock	171	Midland Company	8809
Glasgow, Paisley, and Ayr	1390	Newcastle and Carlisle	1443
Grand Junction	4407	North Union	2714
Great North of England	1490	Preston and Wyre	773
Great Western	14050	South-Eastern and Dover	13509
Liverpool and Manchester	2677	Sheffield and Manchester	1027
London and Birmingham	4607	Ulster	113
London and Brighton	2241	York and North Midland	808
London and South-Western	2408	Total	£79,519

RAILWAYS AND THE BOARD OF TRADE.

The ninth notification of the Board of Trade appeared on Tuesday last, when having had under consideration the following schemes for extending railway communication in Scotland—viz., the Clydesdale Junction, the Caledonian, the Edinburgh and Glasgow (Stirling Branch), the Edinburgh and Hawick, the Glasgow, Dumfries, and Carlisle, and the Scottish Central—they have determined on reporting to Parliament *in favour* of the Clydesdale Junction, Caledonian, Edinburgh and Hawick, and the Scottish Central; and *against* the Edinburgh and Glasgow (Stirling Branch), and the Glasgow, Dumfries, and Carlisle. Twelve railways were devised for affording increased accommodation to the border country; it will be seen that six have been above adjudicated on, four in a favourable manner, and the remainder discountenanced; of the four former, three are grand arterial undertakings—viz., the Clydesdale Junction, the Caledonian, and the Scottish Central. Of the Caledonian, we always anticipated the most satisfactory report, and the Board of Trade will gain additional approbation and confidence by the considerations which influenced it in adopting this line. The Caledonian starts from the Lancaster and Carlisle line, now in course of construction, and passes through the valleys of the Annan and the Clyde, *via* Lanark to Edinburgh on the east, and Glasgow on the west. It was planned by Mr. Locke in such a manner as to confer the readiest accommodation to a large population, and to tourists visiting the Falls of the Clyde, Moffat, and Scottish lakes. By means of the Perth and Stirling lines, it will connect the north of Scotland with England, and bring Edinburgh into direct communication with London and the districts of Lancashire, the trade to which place is now carried on by canal. It will take in the Coalbridge line, and be brought into connection with those of Stirling, Perth, and Dundee. The Caledonian is 112 miles long, and its cost, as estimated by Mr. Locke, will be 800,000*l.* It is proposed to lay down a series of conduit pipes for supplying Edinburgh with water. Its rival—the Glasgow, Dumfries, and Carlisle—is ninety-two miles long, being shorter by twenty miles than the Caledonian, but possessing disadvantages which make the other competing one far superior. It is expected that a sharp contest will arise between these two lines in committee—at present, we see no reason why the report of the Board in favour of the Caledonian should not be indefinitely confirmed.

The *Gazette* of last evening contains a further report on the new railway projects, but is confined exclusively to those proposed for Ireland. The Board—having had under consideration the Great Western (Ireland) Railway, Dublin to Mullingar, &c.; the Great Western (Ireland) Railway, Alternative Line; the Great Western (Ireland) Railway, Extension Line; the Irish Great Western, Dublin to Galway; the Londonderry and Enniskillen; the Londonderry and Coleraine; Blackburn, Burnley, and Accrington Extension; Blackburn, Darwen and Bolton;—have determined on reporting to Parliament *in favour* of the Irish Great Western, Dublin to Galway; Londonderry and Enniskillen; Blackburn, Burnley, and Accrington Extension; and the Blackburn, Darwen, and Bolton lines;—and *against* the Great Western (Ireland) Railway, Dublin to Mullingar, &c.; the Great Western (Ireland) Railway, Alternative Line; the Great Western (Ireland) Railway, Extension Line; and the Londonderry and Coleraine lines.

We perceive that the first important step, as regards railway legislation, was taken in Parliament last evening, Mr. B. Denison having brought in the London and York Railway Bill, Lord Ashley that of the Great Northern, and another hon. Member the Norwich and Brandon, all of which were laid on the table and read a first time. Petitions were also presented against the Norwich and Brandon, the Glasgow Junction, and the Birmingham and Sheffield Railway Bills.

EXPORT DUTIES ON COAL.—In the House of Commons last evening, Mr. Hodgson Hinde put a question to the Chancellor of the Exchequer on the subject of the export duties on coals, relative to the period when the impost should cease; observing, that whilst it was probable that the duty would be taken off, persons who had coal to ship, for abroad, were unwilling to pay the duty. He therefore asked when it was intended that the duty should be taken off in the event of Parliament agreeing to the repeal. The Chancellor of the Exchequer answered, that the duty would cease from the day when the resolution should have passed in committee.

THE WEST INDIA MAIL.—The *Tweed*, Royal Mail Company's steamship, Capt. G. Parsons, arrived at Southampton yesterday afternoon, with the usual mails, but we were unable to obtain our information in time for the present Journal. She brings on freight 1089 dollars, 1810*l.* 8s. 7d. in British coin, 1569 oz. of gold dust, 936 oz. of old silver, and one box of pearls, valued at 1200*l.*

Original Correspondence.

THE MINING INTEREST—ALTERATIONS IN DUTY.

SIR,—I shall be obliged by the insertion of my letter, addressed to the Editor of *The Times*, in your next week's publication. I am, &c.,

7, Victoria-square, Feb. 15. EDMUND TURNER.

TO THE EDITOR OF THE TIMES.

SIR,—As a question which I put to Sir Robert Peel on Friday night, and his answer, are both misrepresented in your report, I am sure you will allow me to correct them. In his speech on the Budget, in reference to imports, Sir R. Peel stated it to be the intention of the Government "to remove the duty from ores and minerals, except copper ore, in respect of which an arrangement was made in 1842, which has worked exceedingly well." I am reported by you to have said, that I hoped some alteration would be made in the duties on tin and copper ores this session—whereas, the question which I put to the Right Hon. Baronet was, whether the Government meant to allow the import of tin or tin ore free of duty? His reply was confirmatory of the above extract from his speech, and not, as you have reported it, "that tin and copper ores would be imported free, but that there would be no alteration in the duty on tin.—The distinction is important to the interests of Cornwall and my constituents, and I therefore beg the favour of the insertion of this letter. EDMUND TURNER.

House of Commons, Feb. 15.

UNITED MEXICAN MINING COMPANY.

SIR,—Can you, or any of your well-informed correspondents, inform me as to the cause, if cause can be assigned, for the present low price of shares of the above company. With the comparatively bright prospects of the mines, with the implied promise of a forthcoming dividend, and with the highly satisfactory letter of Lord Aberdeen, in which he promises to adopt measures to enforce the payment of the debt due by the Mexican Government to the company, and amounting to between 200,000 and 300,000 dollars, and the anticipated arrival by the next mail of 50,000 dollars, are circumstances of so encouraging a character that I am at a total loss for the low price of the shares—viz. 4*l.*; whereas, from appearances, I should suppose they were fully worth 10*l.* or 12*l.* I am glad to find that a special general meeting is convened for next Thursday, when the letter, to which I have above referred, will be laid before the meeting; and I trust, from the improved prospects of the concern, that a few months only will expire before a dividend is declared, and that instead of 5s., as hinted at the last meeting, it will be 10s. or 15s. per share. E. T. M.

February 28.

TALACRE COAL AND IRON COMPANY.

SIR,—I premise you will have some notion of the issue of our trial in Dublin in the Talacre affairs, which were only closed on Sunday morning. Perhaps you will be good enough to say that our worthy trustee, Mr. Alderman Thomas Wood, will now, doubtless, that the law is against him, take care of us poor devils, as I find that as lessee for the valuable property charged at 120,000*l.*, he has handed it over again to Sir Edward's representatives. I think he has done quite right in this, for it will certainly save us money; at the same time I should, in common with others, like a small return in part of money applied to the concern.

Nottingham Close, Feb. 19. HENRY BROWN.

EXPLOSIONS OF FIRE DAMP IN COAL FIELDS.

SIR,—As you are a zealous advocate for ameliorating the present condition of the mining population generally, and of coal miners in particular, I would draw your attention, and the attention of coal overseers especially, to a *new view* of the effects of explosions of fire damp.

It is a supposed fact, that many more lives are lost in consequence of what is termed the *after damp* than from the immediate effect of the fire. That this after damp contains a large portion of carbonic acid gas (often termed *sulphur* by the working collier), there can be no dispute; but, with all due submission to the opinions of those experienced in such matters, I would say, that on the explosion of fire damp in coal levels there is a *perfect vacuum* formed in the centre, as it were, of the explosion (similar to the vacuum produced by the explosion of hydrogen and oxygen in Brown's gas-engine); and the effect upon all living animals incautiously exposed to the influence of this vacuum is an instantaneous and *total exhaustion of the lungs*, and life consequently becomes extinct.

Now, if it were possible (and, from inquiries made on the subject, I believe it to be so) for persons exposed to this vacuum to hold their breath, and firmly close their mouth and nostrils, for a few seconds, till the air returns, I think they would have a great chance of escaping with their lives—for, although the after damp, or returning air, will in almost all cases certainly contain a large portion of carbonic acid, yet there may still be a sufficient quantity of oxygen rushing into the level along with it to enable a person to breathe, and to exert themselves, so as to remove from the scene of danger.—That this new view of the effect of explosions of fire damp in coal mines may lead to improved means of safety to the collier, is the firm belief and the sincere wish of Sir, yours, &c., S. B. ROGERS.

Nantyglo, Feb. 17.

VENTILATION OF MINES.

SIR,—I have been desired to forward to you a copy of this petition for the better ventilation of coal mines, with a request that you will have the kindness to insert the same in your paper. I am, Sir, &c.,

Newcastle-on-Tyne, Feb. 17. W. DANIELLS.

PETITION TO PARLIAMENT FOR THE BETTER VENTILATION OF COAL MINES.

To the Honourable the Commons of Great Britain and Ireland in Parliament assembled—The humble Petition of the undersigned inhabitants of the county of ——

Showeth,—That your petitioners humbly solicit the attention of your hon. House to the following plain statements of the dangerous and unhealthy nature of the occupation whereby the great majority of your petitioners earn a livelihood for themselves and families.

1. Your petitioners complain of the serious and awful frequency of those direful and distressing events, the exploding of inflammable gas in the pits and collieries in many counties of Great Britain, whereby a very serious amount of lives of our fellow-workmen have been from time to time prematurely and suddenly destroyed, without any efficient remedial measure having been adopted for the prevention of similar calamities, thus exposing the lives of your petitioners to the like catastrophes; and at this moment such is the frequency of those events, that your petitioners respectfully entreat your hon. House to cause some legislative enactment to be passed, by the present session of Parliament, to compel the owners of mines and collieries to adopt some uniform and generally acknowledged remedy for the better protection in future of the lives of your petitioners. Further, your petitioners beg to acquaint your hon. House, that being in daily converse with, and having personal and individual experience of, the inefficiency of the present system of ventilating the coal mines of this country, and the acknowledged inadequacy of the same by the owners and viewers of collieries—for the future prevention of similar misfortunes, as above alluded to, we beg most respectfully to submit to the consideration of your hon. House the following opinions as to what we conceive ought to constitute the basis of any legislative enactment for the purpose of providing a safe and healthy ventilation of the coal mines of this country:—

In the opinion of your petitioners, the only safe and efficient remedy would be, to cause the sinking of more shafts, and a more regular and judicious mode of working the broken, or removing the pillars, whereby what is technically called the "goaf" is created, and where, your hon. House will understand, very many of those extensive explosions originate. Your petitioners beg to submit to your hon. House, that it is the opinion of your petitioners, that in any enactment passed for the express purpose of providing an efficient, safe, and healthy ventilation of coal mines, that it should be provided—that not less than two separate shafts should be sunk in the opening out of any coal-field or royalty, the down-cast shaft to be not less than seven feet diameter, and the up-cast not less than ten feet diameter; and that as soon as fifty acres shall be excavated, one more additional shaft be sunk, and so on for every fifty acres of excavation one additional shaft, thus securing a command of atmospheric air of any required quantity; added to which, the removal of the pillars should not be allowed to be worked until the boundary of some part of the mine had been reached, and then a sufficient current of atmospheric air could be made to sweep the shores of the goaf, and thus prevent the possibility of any sudden eruption of "gas-bags" (as at Haswell and other places) from overpowering the current of air, and thereby causing explosions and the consequent loss of life.

2. Your petitioners have of late had their attention called to the decided utility and efficiency of a plan for effecting the same object, but by a different process—viz. the PLAN OF JAMES RYAN, Esq., the utility of which has been authenticated by the signatures of several practical, scientific, and respectable gentlemen, who have witnessed the results in South Staffordshire, where it has been put into practice.

Your petitioners would pray your hon. House to cause a strict and close examination to be made into the said plan of Mr. Ryan's, and also to make an experiment, either in Durham or Northumberland, at the expense of the country, to establish or otherwise test the validity and soundness of the plan.

3. Your petitioners beg further to inform your hon. House, that it is not the presence of inflammable gas alone that they have to complain of; but that their health is very much injured, and consequently their lives shortened, by being compelled to work where the presence of carbonic acid gas (often called black or choke damp) abounds; and, such is the careless and imperfect system of ventilation, that your petitioners respectfully solicit your hon. House to cause the sinking of a like number of shafts in those mines where carbonic acid gas abounds, as in those where hydrogen or inflammable gas is abundant.

Your petitioners further pray, that you will be pleased to appoint a special committee of your hon. House, for the purpose of examining competent persons as to the cause of, and remedy for, such dreadful loss of life; also to inquire, whether the lamp commonly used in mining operations (Davy's) be truly a safety lamp, and to inquire into the merits of Mr. Martin's lamp; and at the same time to inquire, whether it is not essential that there should be separate air-courses in mines, in order to establish a continuous stream of atmospheric air; also, into the dangerous nature of fly-doors, which can be proved to be very injurious, having a manifest tendency to cause explosions; and to consider the propriety of establishing National Schools, to teach mineralogical chemistry, for the purpose of enabling well qualified persons to detect the presence of the fatal explosive mixture. We further pray your hon. House to cause intelligent workmen to be examined before such committee, and not exclusively coal owners and viewers.

Your petitioners likewise pray your hon. House to pass an act to compel the registry of plans, &c., of workings in mines, because we believe such registry would have a beneficial effect, preventing the danger of entering into old workings, by which inundations of water are caused, and often attended with great danger to the miners at work, and often with loss of life; besides, the registry of workings would be a national benefit, by showing the worked and unworked portions of coal seams.

In conclusion, your petitioners beg to apprise your hon. House of their firm conviction that the time has now arrived when something must be done to prevent, if possible, the frequency and extent of such serious loss of health and life by explosions and otherwise; and that your hon. House will be pleased to approve of the aforesaid plan of sinking more shafts, by passing a law making it imperative to sink such shafts, as detailed in the first paragraph; also, that your hon. House will be pleased further to legislate and enact that certain inspectors of mines and collieries be appointed by Government, in order to insure fairly the carrying into practice the provisions and enactments which your hon. House, in its wisdom, may think fit to pass.

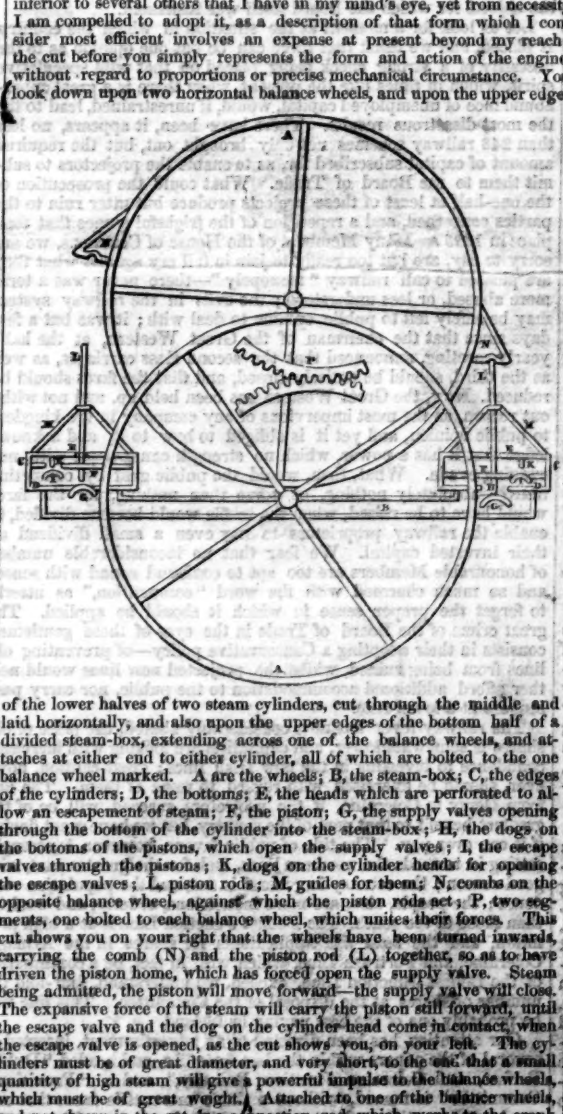
BRIGHTON AND HASTINGS AND BRIGHTON AND CHICHESTER RAILWAYS.

SIR,—I would strongly recommend to the Brighton and Hastings and Brighton and Chichester Railway Companies, to enter into negociations, the former with the Dover, and the latter with the Southampton Companies, for leasing to them their respective lines, for a permanency. After the expiration of ten years (during which time the Brighton Company would probably demand a lease), the lines would be theirs, and, in the mean time, they, and not rival companies, would have granted to them by Parliament any branches that might be made. The line from Portsmouth to Chichester would, of course, be given up to the Southampton Company, and Parliamentary squabbles avoided. The shareholders of both lines would, I doubt not, if they gave up participation in profits, obtain 5 per cent. on their investments. A SHAREHOLDER TO SOME EXTENT IN BOTH LINES.

Pall-mall, Feb. 19.

THE LAWS OF MOTION—NEW INVENTION.—No. V.

SIR,—I fear that this imperfect description will be but a poor apology to the public for my rash promises to describe a working engine. But, as all the world knows that inventors have more of ether than of sinew, I venture to hope that liberal allowances will be made. I find the methods in which this principle may be applied so numerous, that it is with difficulty I can confine my mind to any particular form; this which I offer is inferior to several others that I have in my mind's eye, yet from necessity I am compelled to adopt it, as a description of that form which I consider most efficient involves an expense at present beyond my reach; the cut before you simply represents the form and action of the engine, without regard to proportions or precise mechanical circumstance. You look down upon two horizontal balance wheels, and upon the upper edges



of the lower halves of two steam cylinders, cut through the middle and laid horizontally, and also upon the upper edges of the bottom half of a divided steam-box, extending across one of the balance wheels, and attaches at either end to either cylinder, all of which are bolted to the one balance wheel marked. A are the wheels; B, the steam-box; C, the edges of the cylinders; D, the bottoms; E, the heads which are perforated to allow an escapement of steam; F, the piston; G, the supply valves opening through the bottom of the cylinder into the steam-box; H, the dogs on the bottoms of the pistons, which open the supply valves; I, the escape valves through the pistons; K, dogs on the cylinder heads for opening the escape valves; L, piston rods; M, guides for them; N, combs on the opposite balance wheel, against which the piston rods act; P, two segments, one bolted to each balance wheel, which unites their forces. This cut shows you on your right that the wheels have been turned inwards, carrying the comb (N) and the piston rod (L) together, so as to have driven the piston home, which has forced open the supply valve. Steam being admitted, the piston will move forward—the supply valve will close. The expansive force of the steam will carry the piston still forward, until the escape valve and the dog on the cylinder head come in contact, when the escape valve is opened, as the cut shows you, on your left. The cylinders must be of great diameter, and very short, to the end that a small quantity of high steam will give a powerful impulse to the balance wheels, which must be of great weight. Attached to one of the balance wheels, and not shown in the cut, is a connection rod, which works to the crank of a vertical fly wheel—the rod so arranged, by means of an elongated hole or slot, as, when it has driven the crank to its centre, that the reverse action of the engine draws it back, and leaves the crank free to turn its centre, and to pass on to a half centre, where it is overtaken, and the momentum of the balance wheels thrown upon it. And here I feel bound to aver, that the notion that a reciprocating force is misapplied at any angle of the crank is, in my opinion, without foundation; and I do think, that any man will arrive at the same conclusion, if, when he charges that less duty is being done by the steam force as the crank approaches a centre, he will take the trouble at the same time to consider that less steam is being used. The advance of the crank from a half centre to a centre is but a shortening of its lever, an action peculiarly adapted to enable the fly wheel to check the motion of a mass, and bring it gradually to a state of rest. I wish to be understood, that the main feature of this invention is in separating, by sudden and powerful intervening impulse, two bodies, either floating in fluid, pendant from long suspenders, moving on planes, or turning on pivots, and that the increase on the power applied is more and more manifest as the weight of the bodies is increased. Up to the largest masses that human courage and skill could adventure upon, my experience goes to convince me beyond a doubt, that if two vessels of the size of the *Great Britain* were placed together, so that each presented to the other a perfect flat surface as broad as their sterns, so nicely fitted as to prevent waste from escapement, the explosion of a single ounce of gunpowder would separate them with great force.

The following remarks, which I extract from my first letter, will, better perhaps, convey my ideas on the subject:—"Simple motion, in my humble opinion, is that mysterious impulse manifest in muscular action in electricity or caloric. Subordinate to simple motion, are several distinct forces, two of which I shall describe—the one passive and the other arbitrary. Passive force is found in muscular action in the expansion of fluids and other elastic matter in disturbed equilibrium, and in the downward tendency of suspended weight. I deem this force passive, because it is not suspended or restricted to specific motion. Arbitrary force or motion is force from the inertia of a body which has been put in motion by passive force. This motion I deem arbitrary, because it cannot be restricted to specific motion, or withheld from immediate demonstration. On the alternate action of these two forces rests the principle of my invention, which is, that a heavy body resting on a good pivot is put in motion by passive force, when its momentum is given to the object propelled, which brings it quickly to a state of rest again."—*Feb.* 20. LEWIS KNAPP.

SAMBRE AND MEUSE RAILWAY.

SIR,—In a former Number of the *Mining Journal* the merits of the above undertaking are discussed with your usual ability. Every one knows that for the carrying out the important undertaking two parties are competitors; one is designated the Central, the other the Western Line. Of the apparent advantages of the former you have made much—of the few inconveniences of the latter you have made more—in my mind, far more than they deserve. I applaud the freedom with which you have met the subject, and, fully accrediting the purity of your motives, will you accord me the same sincerity, and allow me equal freedom in combating your remarks? And, first, for argument's sake, I will admit all the advantages of the Central Line, and give you the full benefit of the concession; but while I grant the merits of the one, I deny the disadvantages of the other—nay, further, I affirm that the other has equal, if not superior, advantages, and, if I prove either proposition, I contend that the party for which I plead is entitled to preference; for it will not be sufficient for you to name the disadvantages of the Western, unless you prove, not only that the Central is not encumbered with the same, but that it has positive advantages? nor will it be enough to deny my claims without establishing your own—in a word, you must prove that the benefits which will accrue from the Central are superior in every respect to those which the Western offers, and I insist for this right upon the well-known principle, that "possession is nine points of the law." That possession the Western enjoyed having been contemplated for more than ten years prior to the appearance of the Central; therefore, unless the latter can put beyond all question that it is manifestly and incontrovertibly superior to the former, its claims to all attention must be discountenanced and denied.

Now, the point that you mainly consider as favourable to the Central project, is, that it will run through the mineral districts—aye! *and nowhere else!* it may connect one coal-pit with another coal-pit—one quarry with another quarry—one mine with another mine; but will it connect, either directly or indirectly, one mine with a great city?—one coal-pit with a populous town?—one quarry with a single locality requiring the produce? With the paltry exception of the points of departure and arrival, there is scarce one solitary town of note which this Central Line condescends even to approach. Are not these positive disadvantages?

But has the Western no decided merits? Suppose it does not exactly run through the bed of a mine, is that any reason why it should not propose a plan for obviating this inconvenience, which, though making it appear somewhat inferior to the Central project, when more attentively examined, transfers the preponderance in favour of itself; for, though the Western Line does not pass *directly* through the mining localities, yet it is so immediately connected by short and easy branches to every one of them, that it is a matter for consideration whether this is not even preferable to the making them their distinct route—for, by avoiding these, while their traffic is not neglected nor damaged, other towns become connected with the line, and with the beds of mineral, thus affording undoubted advantages to both. Again, the apparent disadvantage in the Western Line not starting from Charleroi is materially obviated, if not removed, by its junction with the State Railway at Marchiennes-au-Pont, and independent of the facility of transit thus afforded between these two districts, a connection with this important corporation must be a highly important point. With respect to the greater cost of the Western Line, I confess, it even correct, I regard the difference between the two projects as very insignificant; 120,000*l.* on an expensive and important line is a mere trifle, and would be of little consequence if its advantages counterbalance it; the cost of an undertaking vanishes before an increasing and lucrative traffic.

Thus, Sir, has the Western advantages which the Central can never possess, and it is wholly free from the objections to which the latter is open; one great and undeniable evil in the Central being that it contains gradients greater than either experience or safety allows, while those of the Western are regular and gentle. This circumstance should not be overlooked, for it is of inconceivable importance, as any engineer will testify and admit. Then, having in itself positive superior advantages, and unencumbered with the demerits which overburthen the Central, I claim for the Western, which was first projected in 1834, preference and support. If I am wrong in any of my views, I should be happy to see some one interested combat, or correct, them. The subject is of vast importance, and, as such, is worthy of the fullest discussion; this, Mr. Editor, must be my apology for obtruding at this length upon your columns.

Mark-lane, Feb. 14. SCIENS.

IMPROVED BED FOR INVALIDS.

SIR,—In answer to a letter which appeared in your columns two weeks since, I beg to state that I have seen the bed deposited at the Society of Arts by Mr. Bothway, which (although a very clever invention) does not in the least assimilate with my invalid bedstead. HENRY PRATT.

123, *New Bond-street, Feb.* 18.

CEMETERY COMPANIES.—The vast benefits arising from any measures that will insure the health of populous towns, and preserve them from the evils of contagion, must be obvious to every one. Not only in the times of epidemic has the infection of the dead as well as the living created a fearful addition to the bills of mortality, but it is incontestible that the mere malaria arising from corpses is exceedingly injurious to the health of a community. What must be the extent of this evil in densely-crowded towns, where the dead are buried in the very heart of the population, frequently displacing the remains of those recently interred, is too apparent to need comment. The mischief was considered so great, that in 1841 the Legislature interfered, and a bill being brought in for the Improvement of Health in Towns, by removing the interment of the dead from their precincts, a commission being in consequence appointed to examine and report on the subject. It is to be regretted that since then no notice whatever has been taken of the important measure, nor any mention of the circumstance made. In consequence of this apathy on the part of Parliament it has been thought useless to wait till they interfere; one or two towns have, therefore, prominently stepped forward, and themselves endeavoured to adopt specific measures to obviate the manifest evils attending the present system. We have before us the prospectuses of two companies thus formed; one for the benefit of Plymouth and its vicinity—the other, entitled the Victoria Park Cemetery Company, for the inhabitants of the Tower Hamlets. Such laudable undertakings are too valuable in themselves, and their immediate advantages too manifest, to need recommendation.

IRON TRADE IN SCOTLAND.—Within these last few days, a large field of coal and ironstone, in the east country, has been leased by an extensive ironmaster from a nobleman who stands at the head of the peerage in Scotland, and probably the greatest mineral proprietor in it, and operations have already been commenced, with the prospect of having a number of furnaces in blast in the course of four or five months; and such an impulse has been given to the trade generally, but especially to pig-iron, as to have called into existence, within a few months, preparations on a larger scale for increasing the production than have been made during any equal period in the whole history of the manufacture in Scotland. Furnaces which have been silent for years, and which at one time it was thought would remain so for ever, are blown in again; in the enlargement of works, already producing large quantities, no fewer than six blowing engines, two the largest ever made in Scotland, and capable each of furnishing blast to eight or nine furnaces, have been either put up, or are in the course of erection; and besides all this, in the course of the present year other two new works in Ayrshire, a comparatively fresh field for the manufacture of iron, are expected to be in active operation. Speculation has been, and still continues to be, more than usually active; and we are within limits when we state, that the quantity of Scotch pig-iron held in the hands of speculators and others will not be less than 250,000 tons (the value of which, at the present price, is equal to a million sterling), and a large portion of it is passing from hand to hand with incredible rapidity, at a gradual advance of price. In such means, in the short space of two months, Scotch pig-iron has advanced from 50s. and 52s. 6d. to 75s. and 80s.; and in the present state of wild excitement, it is evident that prices cannot rest here.—*Glasgow Herald.*

SAMBRE AND MEUSE RAILWAYS.

Our attention has been again called to the competing companies for railway between the Sambre and the Meuse, and the important character of the district which the proposed lines are intended to benefit has claims upon a journalist who has devoted himself to the consideration of the metallurgic and geological peculiarities of the various mineral basins of Europe. That of the entire Sambre and Meuse is unquestionably one of the richest in Europe, and in proportion to its importance to Belgium, and of its value to the north-eastern portions of France, which derive their supply of coal from the coal-field of Charleroi, are its demands upon our time and attention. The striking features of the country are, that the great coal-field of Belgium, of which Charleroi is the centre, and in the immediate vicinity of which are situated numerous blast furnaces, and other establishments for the smelting and fabricating of iron, is at a considerable distance from the beds of iron ore, upon the supply of which these extensive works depend, and that the district is destitute of those advantages which the new principle of inter-communication by railway would entail. It is very evident, therefore, that the immediate and national benefits to be derived from a mineral basin, containing many, if not all, the elements through which the commerce and manufactures of a country must rise to greatness, would be forwarded by the construction of a line of railway which shall unite these mineral riches—the basis of commercial greatness and of national wealth—by a direct line, and which shall, at the same time, be so regulated in its construction, and restricted in its tolls, as to shorten the distance between the coal-field and beds of iron ore, and to reduce to the lowest limit, consistent with a fair remunerative return for the capital required to be embarked in the formation of the road, the charges upon traffic.

We desire to test the merits of the competing companies for the railway so much demanded upon the foregoing principle, and, therefore, briefly recur to the leading features of the two undertakings. The Central Line takes its point of departure direct from Charleroi, the centre of the coal-field, and passes in nearly a straight line through the iron ore district to Vireux or the Meuse—whereas the Western Line sets out nearly two miles to the west of Charleroi, and skirting the mineral basin, seeking to supply the necessities of the metallurgical establishments by a branch, by which the distance between the coal-field and the iron ore is more than doubled, and then takes its course to Vireux, the main line to which is six miles longer than that of the competing company. Nor does the comparison stop here; the tolls required by the Central Line are one-third less than those demanded by the Western, which, by its increased distance between the two great minerals, would very little, if at all, diminish the present expense of transit, and merely afford a facility of a more rapid communication. To this striking difference between the two lines, are to be added the no less important one, that the estimated cost of the Western Line is 620,000*l.*, while the sum required for the Central Line is only 320,000*l.* Such being the marked features of the two companies, as affecting the district, we must next look, if the term may be allowed, at their moral claims for public support. We shall take these in their order of proceeding, and the Western Line having been first introduced to public notice, shall have our first attention. It struggled into existence, after several years of probationary consideration, in the early part of the *last* year, when the railway mania was at its height, and when the subscription list for a "railway," be it what it might, was instantly filled; the time was well chosen—it was introduced to the English public by the highly respectable firm of "Thompson Hankey, jun., and Co.," and its claims upon public support were—that it had been approved by the Government engineer of Belgium, and that it was based upon a contract made with the Minister of Public Works, for a guarantee of a minimum interest of 4 per cent. per annum upon its capital stock of 620,000*l.* by the Legislative Chambers of Belgium. Upon the faith of this guarantee, which forms one of the leading conditions of the prospectus issued to the public, and with an undertaking that the subscriptions should be returned if the guarantee was not given, the subscription list was, as we have stated, rapidly filled, and the deposits paid upon the shares allotted. This company has not yet received its concession, and it is understood that the principal feature by which the subscriptions were obtained—viz., the guarantee of 4 per cent. per annum upon the capital stock—*has been abandoned* by the gentlemen interested with the management of the undertaking, although the only means by which they had a chance of obtaining their concession was the possession of the funds to sustain their line. This company, with its extraordinary modifications to suit the altered state of its fortunes, and to avoid a successful opposition to its project, now stands for consideration in the Belgian Chamber of Deputies.

It is now essential that our readers should be presented with a similar outline of the rise and progress of the Sambre and Meuse Central Railway Company, which is an Anglo-Belgian undertaking. Many gentlemen connected with the coal and iron districts of the Sambre and the Meuse, and deeply interested in its manufactures and its improvements, fully impressed with the necessity for the construction of a railway to unite the two great staples of the country, and to facilitate their interchange, as likewise to extend the foreign sales of the produce of the coal-field of Charleroi, were of opinion that the Western Line was not calculated to effect the desired objects. They were dissatisfied with its terminus of departure, with its western direction, and with the length of the line and branch between the coal-field and the beds of iron ore, and they deemed the tariff demanded excessive. With these opinions, they suggested the survey of a Central Line. The survey was not commenced until the middle of last year, though the proposed line had been repeatedly traversed and decided upon. The maps, plans, and sections were completed in the month of October, and deposited in the usual manner early in the month of November last. A concession was then demanded, with the characteristic features of a tariff or toll one-third less than that of the competing line, and of being without a requisition for the guarantee of a minimum rate of interest upon the capital of 420,000*l.* required for the work. A contract was then entered into for the construction of the works, guaranteed by one of the richest firms in Belgium. Arrangements were subsequently negotiated to bring the Central Line before the English public, upon the understanding that the direction should be composed of a united committee of Belgian gentlemen, connected with the district, and of others resident in London. A prospectus was accordingly published, supported by men of the highest character and fortune connected with the district, and by a committee of English gentlemen, independent in fortune and station. Both parties are before the public. The committee of the Central Line have sought to mature their undertaking, and bring their measure before the Chamber of Deputies of Belgium, for a calm and deliberate consideration upon its merits, relying upon the unanimous petitions of every commune interested in the undertaking in its favour, as calculated to insure its legislative sanction.

There are many points insisted on by the opponents of the Central Line; we confine ourselves now to the objections raised in particular to the gradients of the line, which have been most erroneously deemed unworkable, because M. Magis has acceded his approbation to the other line. Now, the gradient objected to in the Central Line is that of an inclined plane of 1 in 43½—whereas the inclined plane on the Birmingham and Gloucester Railway is 1 in 37, which has been so successfully worked by locomotive power. Let this practical question be set at rest in the Belgian Legislative Chambers, as it has in the Parliament of England.

With respect to M. Magis' *general* approbation of the Western Line, we are prepared to show, by his own report, that it never had his *general* approval—that his report in its favour was made before the survey of the Central Line, and that he was (we use nearly his own words) so struck with the imperfections of the Western project, that he proposed as a remedy the execution of one of the branches of the project of M. Splingaert—that is to say, to make two railways instead of one.

The length of the article we had prepared compels us to stop at this point. We will recur to the subject in our next Number.

GEOLOGICAL MAP OF CORNWALL.—We have received from Mr. Laurie, of Fleet-street, a beautifully-coloured geological map of the county of Cornwall, subdivided and arranged as to present a ready view of all the mineral veins, canals and other roads. The map has been carefully reduced from the Trigonometrical Survey, and, for its accuracy and beautiful colouring, will be found not only extremely useful to parties interested in the mineral wealth and railroads of the county, but highly valued as a pleasing ornament.

INCREASE OF THE INDIA METAL TRADE.—Of copper, the increase, on comparison with the preceding year, was from 43,951 to 53,500 cwts.; of iron, from 187,373 to 311,533 cwts.; of lead, from 7585 to 19,039 cwts.; of steel, from 7585 to 19,039 cwts.; of spelter, from 11,972 to 29,327 cwts.; of quicksilver, from 14,404 to 120,728 lbs.; and of tinned plates, from 1540 to 4391 boxes.

Proceedings of Public Companies.

MEETINGS.

MONDAY.—North American Colonial Association, at One—General Annuity Endowment Association, at Twelve—Brighton, Lewes, and Hastings Railway, at One.

TUESDAY.—Irish Waste Land Company, at One—St. Katharine Dock Company, at Twelve—Cornwall and Devon Central Railway, at Twelve—Eastern Coast of Central America Company, at One—Edinburgh and Glasgow Railway at One—West of London and Westminster Cemetery Company, at One—General Steam Navigation Company, at Two.

WEDNESDAY.—Furness Railway, at Two—Ulster Canal Company, at half-past Two—Arigna Iron and Coal Company, at half-past Two—Chester and Holyhead Railway, at One—Provident Clerks' Association, at Six.

THURSDAY.—British Iron Company, at One—Hungerford and Lambeth Suspension-bridge Company, at One—United Mexican Mining Association, at One—Bedford United Mining Association, at One—Bristol and Exeter Railway, at Twelve.

FRIDAY.—General Shipping Association, at One—Thames Haven Dock and Railway, at One—North Wales Mineral Railway, at One—Guildford Junction Railway, at Twelve—Manchester and Birmingham Railway, at Twelve.

IMPERIAL BRAZILIAN MINING ASSOCIATION.

A special general meeting of the above company was held at the offices, on Thursday, the 20th inst., for the purpose of electing an auditor, in the room of Emanuel Aguilar, Esq., deceased, when Abraham John Valpy, Esq., was duly elected. There being no other business, the meeting separated.

WHEAL MARY ANN MINING COMPANY.

A meeting of the adventurers, which was fully attended, was held at the Pack-Horse Inn, St. Blazey, on the 11th inst. The report (which will be found in another column) having been read, the accounts were examined and allowed, showing a deficit of 15*l.* 5s. 8d., against which, however, were certain calls unpaid. A call of 10s. per share was made, to meet the current expenses. Mr. W. Hodge having retired from the office of purser, Mr. B. Brokenshar was appointed to that office. A vote of thanks was passed to Mr. Hodge, regretting that his other duties precluded him from retaining his office. The proceedings of the meeting were of a conversational character; at the same time we may add, that the adventure was held by all present as one of promise, and deserving of a fair trial, which the adventurers seemed well disposed to give it.

SOUTHAMPTON DOCK COMPANY.

The half-yearly general meeting of the above company was held at the offices, on Thursday, the 20th inst., Col. BARLOW in the chair.

The SECRETARY having read the notice convening the meeting, and the resolutions passed at the last half-yearly meeting, was about to read the proceedings at the special general meeting recently held, when Mr. RICHARDS objected to that course of proceeding, as he had some observations to make relative to the resolutions passed at the general meeting on the subject of the transaction of the 251 shares referred to in the second resolution.—The CHAIRMAN objected to the course pursued, but the sense of the meeting being in its favour, Mr. DE VERE moved that the resolution in question, exonerating the directors, should be rescinded, which was seconded by Mr. RICHARDS in a speech of considerable length, in which he urged that justice had not been done to the report of the gentlemen appointed to investigate the subject of the charge relative to the 251 shares in question.—Mr. LIGGINS, in reply, stated that he felt no anxiety as to the result of the appeal to the proprietary, as he felt confident, however he might have erred in judgment in the transaction referred to, that he had but one object in view, and that was, the general benefit of the company with which he was associated.—After some further remarks by other proprietors, the motion was put and negatived.

The SECRETARY then read the minutes of the last special general meeting, together with the following report of the directors:—

REPORT.

The directors beg to report to the proprietors, that since the last half-yearly meeting the company's baggage warehouse has been completed, comprising—an extensive ground floor, for the accommodation of the public and the Customs department in clearing the baggage of the numerous passengers arriving from India, from the Levant, from the Peninsula, the Channel Islands, and the continent, with commodious and separate waiting apartments for passengers—on the upper floor a large space devoted to the purposes of a Queen's warehouse, and a still larger to the opening and examination of the costly cargoes imported from the Levant—and in the basement an extensive range of vaults for the housing of ship's stores, &c.—the whole approved and bonded by the Crown. The application of this building to these its intended purposes has enabled the directors to assign the north-west warehouse, previously in use as a baggage warehouse, entirely to the transaction of the company's export trade, which has so increased as to require much more extensive accommodation. To adapt it fully to the purpose, the directors have made an addition to it, which exactly doubles its extent and capacity.

Of the company's intended graving dock the directors have so recently spoken, in their report to the general meeting of proprietors specially convened for the purpose, that they have at present nothing to add upon the subject, further than to state that all the preliminary arrangements have been made for carrying into effect the resolutions of that meeting in the most prompt and efficient manner; and that they have entered into a contract with Messrs. William Cubitt and Co. for the completion of the work in twelve months.

It is a source of just congratulation to the proprietors that the company's improved position has enabled the directors to take up capital with facility at 4 per cent. It was stated to the proprietors at the special meeting in December last, that the company's business was then yielding a revenue more than sufficient to cover the expenses of the entire establishment, and of the working of the dock; together with the interest of the whole of its debt. The most strenuous efforts will continue to be made to obtain every possible increase of business. A steam-tug has recently been chartered by the company, from the employment of which, in seeking and towing ships into the docks, the most advantageous results are expected. And the directors have reason to entertain a confident expectation, that a steadily increasing surplus of income over expenditure must be the necessary consequence of the ample and complete accommodation now offered by the docks to every branch of trade, combined with the facility afforded by the excellent arrangements of the South-Western Railway Company for the rapid and cheap conveyance of goods to the markets of the metropolis. The proprietors will be aware that the extension of the company's business has, from time to time, rendered necessary an increase of their working establishment; but the directors beg to assure them, that they are fully aware of the great importance of economy in every branch of the company's affairs; and that they may rely upon their expenses, under every head, being strictly limited to the lowest scale consistent with such an efficient and satisfactory transaction of the business of the docks, as is essential to the attraction and retention of trade, and to the character and success of the undertaking. At the present meeting four directors—viz., Colonel Barlow, Lieutenant-Colonel Henderson, George Burnand, Esq., and Henry Ranking, Esq., go out of office by rotation, but are eligible for re-election; and their colleagues in the direction beg to recommend them to the proprietors for re-election accordingly. The half-yearly accounts ending the 31st of December last, duly audited, are subjoined. The directors beg to add, that after the ordinary business of this half-yearly general meeting shall have been disposed of, a special general meeting of the proprietors will take place, to again consider and approve the draft of the company's intended amended bill in Parliament, in compliance with the Standing Orders of the House of Lords.

In the statement of accounts annexed to the above report, from the commencement of the undertaking to the 31st December, 1844, are the following:—Receipts: To capital stock, amount of 5319 shares at 50*l.* (subject to a decrease of 8191*l.* for arrears), 257,759*l.*; instalments, 7422*l.* 4s.; to 747 forfeited shares, subject to arrears, 14,460*l.*; to 747 loan notes, 21,090*l.*; borrowed on debenture, 66,800*l.*, and sundry small items—making a total of 376,643*l.* 5s. 5d. Expenditure: Law, engineering, and parliamentary expenses, 5900*l.* 19s. 5d.; purchase of dock land, 5000*l.*; to contractors for work done, 239,724*l.* 16s. 7d.; dredging the river Itchen, 11,903*l.* 18s.; purchase of stone in Osborne Quarry, 2371*l.* 5s., with numerous smaller outgoings—showing a gross expenditure of 362,591*l.* 6s. 1d.;—giving a balance in hand of 14,051*l.* 19s. 4d. The cash account for the half-year ending 31st December, 1844, shows the amount of income to have been 48,874*l.* 15s. 5d., including 42,000*l.* received on debentures; whilst the expenditure, enumerating among its items 15,800*l.* for repaid debenture bonds, 5000*l.* for repaid loan to bankers, 1000*l.* to Messrs. Fox, Henderson, & Co., for iron shed, 1250*l.* contract for sheers, 2987*l.* 15s. 7d. for engineering work—shows a total disbursement of 34,822*l.* 16s. 1d.; balance, as before, 14,051*l.* 19s. 4d.

The CHAIRMAN stated that a considerable increase of business might be expected from arrangements made with the Royal Mail Steam-Packet Company, as also from the importation of coal.—Mr. LIGGINS laid on the table a comparative statement of the expenses of discharging a vessel of his in the dock, with what it would have been if brought to the West India Dock, which showed an actual saving of 33*l.* 7s. 8d.; and, as a proof of the efficiency and importance of their establishment, the ship commenced discharging on the Monday, and he had samples for exhibition in Mincing-lane on the Tuesday; more than half the cargo was brought up to London by railway, and gave general satisfaction.—Mr. GILES (the engineer) did not think they should confine their views to the trade between London and Southampton alone, as he felt convinced great benefit would arise from the different lines of railway projected, which would convey goods to all parts of the country; and, as a proof of the opinion he entertained of the undertaking, he had not only invested all the salary he received, but a considerable sum in addition.—A PROPRIETOR wished to know if any decision had been come to by the arbitrators; to which the CHAIRMAN replied, that a decision had been arrived at, but he was not prepared to state the particulars, it having only been closed on the previous day.

Mr. PRICE referred to a proposition made by him on the subject of keeping a profit and loss account, and a general reduction of expenses, and wished to know what steps had been taken to carry out the recommendation of that meeting.—The CHAIRMAN, in reply, produced a profit and loss account, by which there appeared on the last half year a profit of upwards of 300*l.*, and stated that the directors did not consider the salaries paid to their officers could be reduced.—Mr. PRICE expressed himself as not being satisfied with the explanations given by the Chairman, as he was convinced, from the knowledge he had of such concerns, that considerable reductions might be made; he moved, therefore, that a committee of proprietors should be appointed to investigate the matter, and report the result.—Mr. LIGGINS submitted that the motion could not be entertained, without casting a slur on the directors, and superseding their powers.—Mr. RICHARDS considered it would be useless to appoint a committee, after the way in which Mr. Forster's report had been disposed of.—After considerable discussion, the motion was withdrawn, with the understanding that Mr. Price would communicate his ideas to the directors in writing. The directors and auditors were then re-elected; and a vote of thanks having been passed to the chairman and directors, the meeting separated.

PONTOP AND SOUTH SHIELDS RAILWAY COMPANY.

A meeting of the proprietors in this company was held at their offices, in Guildhall-buildings, on Thursday, when a very satisfactory report was submitted by the directors, the substance of which stated, that notwithstanding the great check received by the general trade of the line, in consequence of the pitmen's strike and other concurrent circumstances, which for the space of four months materially crippled their resources, the result of the half-year's traffic was most satisfactory, and proved equal to that of 1843; and thus, despite these unforeseen drawbacks, the anticipations entertained at the last meeting had been fully realised. The receipts for the half-year to the 31st December last were 34,158*l.* 11s. 10d., and the expenditure for the same period 22,401*l.* 16s. 4d., leaving a balance of 11,756*l.* 15s. 6d.; which sum was chargeable with an interest on the mortgage and loan debt, amounting to 5290*l.* 17s. 3d., leaving a balance, applicable to a dividend, of 6466*l.* 18s. 5d. The directors of the Durham Junction Company had paid over to the Pontop and South Shields Company the sum of 35,875*l.*, of which 17,375*l.* appeared in the account of capital accompanying their report; and the further sum of 18,000*l.* was received in January last. This sum was the amount of the purchase money to the Durham Junction Railway, for 400 shares held by the late Stanhope and Tyne Company in that undertaking, and which formed part of the assets assigned, under the power of the act of incorporation, to the Pontop and South Shields Company. It was proposed to the directors at once to write up the amount to the credit of the share account of each proprietor of shares in the company, at the rate of 8*l.* 10s. for each share. A further portion of the debenture debt of the Stanhope and Tyne Company had been paid to the amount of 5252*l.* 11s. 2d. The liabilities of the company had now dwindled to 35,500*l.*, of which 14,500*l.* would be due in June or July of this year, and the remainder in the years 1847 and 1849. To meet the payment of next July, the directors recommended a call of 10*l.* per share, giving credit for 8*l.* 10s. per share received of the Durham Junction Company, and requiring, therefore, payment in cash of only 1*l.* 10s. per share. This, with the balance in hand, would meet the necessary payments. Arrangements were pending with the Newcastle and Darlington Company, which, when matured, would be submitted to the proprietors; and it was anticipated that a considerable increase of revenue might be looked for from the complete development of the resources of the line. Meanwhile a dividend of 30s. per share, being at the rate of 5 per cent., was recommended by the directors.

A short discussion arose previous to the adoption of the report, during which the CHAIRMAN mentioned that, during the period of the pitmen's strike, the company suffered a positive loss of 40*l.* a day. How forcibly does this urge the necessity of a large reserve fund being invariably kept for the contingencies of fluctuation and the various depressions to which railways are subject. In the present instance, had not the foresight of the company forestalled, and thereby prevented, the evil, either the company must have discontinued its course, or incurred a debt which would have crippled all its future circumstances, and marred all prospects of ultimate success. Whereas by timely and prudent economy the company were enabled, not only to meet the enormous daily loss which the temporary strike occasioned, but at the end of the year produce a balance-sheet equally as favourable as that of the preceding. Let not such examples be forgotten or thrown away.

LONDON AND BLACKWALL RAILWAY.

The usual half-yearly meeting of this company took place at the London Tavern, on Thursday, the 20th inst.—The chair was taken by J. N. DANIELL, Esq., when the SECRETARY read the report. This was of a very encouraging nature, and showed an increase of 510,139 in the passengers, and of 323*l.* 5s. 10d. in the receipts. The half-year's takings amounted to 30,433*l.* 18s. 9d., from which there remained a net balance of 7457*l.* 13s.; out of this, the directors recommended the payment of a dividend of 3s. per share; 659*l.* 0s. 7d. had been expended in deepening the well at the Minories, and in extraordinary repairs to the machinery, but there was no increase in the working expenses of the railway in consequence of the large addition to the traffic.

The CHAIRMAN moved the adoption of the report.—Dr. BOWRING, M.P., in seconding it, adverted to the subject of capitalising the debenture bonds, as an act of necessity for their welfare. It acted as a dead weight on all their energies.—Mr. ROSS MANGLES, M.P., said the shares were now worth 8*l.*, subject to the mortgage of 6*l.* a share, as stated by the previous speaker, so that the concern was far from being mortgaged nearly up to its market value.—The CHAIRMAN intimated that at the proper time the capitalisation would be entertained; but, as to the atmospheric principle, they must see it worked first successfully in another quarter.—In reply to Mr. M. A. Goldsmid, the CHAIRMAN said they carried as low as 2s. a ton, and paid every regard to the goods' traffic.—Mr. WHISHAW and Mr. WARD spoke in favour of the capitalisation of the debentures, and the new steam regulations.—Mr. JACKSON threw out some suggestions, one of which was, that the fares should be increased by 2d., which would realise 30,000*l.* annually, which was much better than the small saving by capitalising the debentures. He criticised the management of the company, and said, if the directors did not do their duty, he would attack them to their faces, and not through the columns of the *Mining Journal*.—Several proprietors alluded to the Diamond Company's opposition.—The CHAIRMAN said that company had always refused to make the Brunswick Pier their terminus, although the same advantages had been offered to them as to the other companies, but the board would be still happy to treat with them on the subject.—Mr. LEVY dwelt much upon the value of a good superintendent for the goods' traffic.—The report was adopted, and Mr. Bishop, Dr. Bowring, and Mr. Ferrers, were elected directors, and Mr. Ogilvie an auditor.

The subject of the Epping line next came on, when a statement was read, which showed the weekly number of passengers on the line to be about 13,000. The expenses of making it would be 600,000*l.*, from which a dividend of 10 per cent. was expected. The working expenses would be about 40 per cent.—The CHAIRMAN and several proprietors saw great advantages to be derived from the proposed line. He regretted there had been no report yet from the Board of Trade on the subject, but they were quite in time for Parliament.—Mr. LEVY thought they would not realise 2 per cent. from their Epping scheme, and that taking the traffic at Lea Bridge was quite a fallacy.—The CHAIRMAN said no further step would be taken without consulting the proprietary.—A vote of thanks to the directors then concluded the business.

BRIGHTON AND CHICHESTER RAILWAY.

An adjourned meeting of the proprietors of this company was held on Saturday, the 15th inst., at the London-bridge Station, Captain HOTHAM in the chair.—The report stated that, in accordance with the resolutions adopted at the last meeting, the directors had opened negotiations with the Brighton Company. The first proposition they submitted was—that an agreement be entered into between the two companies to lease the line at 5 per cent., and divide equally the profits—this was declined; they then proposed that the Brighton Company should lease the Chichester line at 4½ per cent., dividing equally the profits—this also was refused; upon that a request was made, that all terms and agreements previously entered into between the companies should be broken off—to this, again, the Brighton Company gave a decided negative.

Under these circumstances, the CHAIRMAN recommended that full powers be given the directors to prosecute their previous scheme for extending their line to Portsmouth, and to adopt the most decided measures for opposing the intentions of the rival company.

A resolution was moved and seconded to that effect, Mr. D. W. HARVEY proposing an amendment—"That further time be given the proprietors to consider their position, and the expediency of entering into further communication with the Brighton Company;" he scouted the idea of extending the line to Portsmouth, as the most extravagantly ridiculous he had ever heard broached. The amendment was seconded, but lost by a large majority. The report was then adopted, and the resolution subsequently passed, after which the meeting separated.

LAUNCESTON AND PLYMOUTH RAILWAY.

A numerous and influential meeting was held at Launceston, on Wednesday, the 19th inst., to consider the most advantageous line in connection with the town.—After a strenuous opposition by Mr. Arundell to any project for connecting Tavistock, and a proposition by Mr. Ley to construct a line to Bristol, it was finally resolved, that the scheme advocated by Mr. Brunel, and now before Parliament, for the connection of Launceston and Tavistock, and the other towns mentioned by the South Devon Company, was the most advisable, and should be adopted.

HULL AND SELBY RAILWAY COMPANY.

A meeting of the proprietors of this company will be held this day (Saturday), at which a report, embodying the following important information will be presented by the directors. The state of the traffic during the last half-year shows a great increase both in goods and passengers over any preceding one—the total number of passengers being 158,920, producing a sum of 16,025*l.* 2s.; this increase is greatly attributable to the success attending the special pleasure trains which were started last summer, and, in consequence of the rapid increase of traffic, 150 waggons have been ordered for the line. It proposes to enter into final arrangements with the Manchester and Leeds Company for other unions with the Leeds and West Riding Junction Railway Company, the Manchester, Bolton, and Bury Canal and Railway Company, and the Wakefield, Pontefract, and Goole Railway Company; at the same time, the report recommends a short delay, at least till the decision of the Board of Trade on the two companies shall have been published. Mr. Broadley, M.P., resigns his office of chairman, and Mr. Tottie will be nominated by the board to succeed that gentleman. Three directors, Messrs. Tottie, Liddell, and Whittaker retire by ballot, and are eligible for re-election.—The accounts show a balance of 17,581*l.* 17s. 5d.; and a dividend of 35s. per share (being at the rate of 7 per cent. per annum), payable on the 7th of March, will be recommended.

AMERICAN COAL TRADE.—The coal produced by the Pennsylvania coal mines in 1844 is officially stated at 1,631,699 tons.

Current Prices of Stocks, Shares, & Metals.

ENGLISH AND FOREIGN STOCKS.

STOCK EXCHANGE, Saturday morning, Twelve o'clock.

Consols, Money, 99¾ ⅛
ditto, Account, 99¾ ⅜
3½ per Cents., 104 ⅛
Reduced 3 per Cents., 100¾ ⅜
Long Annuities, 12 1-16 3-16
Bank Stock, 211½ 212½
Exchequer Bills, 53 61 pm.
Belgian, 5 per Cents., 101 2
Danish, 3 per Cents., 89 90
Portuguese, Conv., 5 per Cents., 59 60
Dutch, 2½ per Cents., 62¾ 3¼
ditto, 4 per Cents., 98⅜ ⅝
Russian, 5 per Cents., 118¾ 119¾
Spanish, 5 per Cents., 28 ⅜
ditto, 3 per Cents., 40¾ ⅞
Brazil, 5 per Cents., 89¾ 90¾
Chili, 6 per Cents., 100 2
Colombia, 6 per Cents., 13¾ 14¾
Mexican, 5 per Cents., 35 ¾
Peru, 6 per Cents., 30 1

[From our own Correspondents.]

LATEST PRICES OF IRISH STOCKS.—3 per Cent. Consols, 99½*l.* to 99¾*l.*; 3 per Cent. Reduced, —*l.*; 3½ per Cent. Stock, 102½*l.* to 102¾*l.*; 3½ per Cent. Debentures, 94½*l.* to 94¾*l.*; Bank Stock, 210*l.*—Dublin and Kingstown Railway, 237¾*l.*; Drogheda, 79*l.*; Gt. Southern and Western, 11¼*l.*; Dublin and Belfast Junction, 5½*l.*; Dublin and Athlone, 3½*l.*; Dublin and Galway, 3½*l.*; Belfast and Ballymena, 3½*l.*; Limerick and Waterford, 4½*l.*; Dundalk and Enniskillen, 3½*l.*; Wexford and Carlow, 2*l.*—Hibernian Bank, 35*l.*; National Bank of Ireland, 15½*l.*; Royal Bank, 14½*l.*; National Insurance, 40*l.*; Patriotic, 11*l.*; Mining Company of Ireland, 12¾*l.*; Wicklow Copper Mine, 19*l.*; City of Dublin Steam Company, 111½*l.*; British and Irish Steam Company, 53*l.*; Dublin and Glasgow ditto, 44*l.*; Steam-ship Building ditto, 54½*l.*

CURRENT PRICES AT LIVERPOOL—THURSDAY EVENING.

Stock.	Closing pr.	Sales.	Stock.	Closing pr.	Sales.
Aberdeen Railway	£2⅜ 3	—	London&South-Western	79½ 80	—
Barnsley Junction	6⅜ 6¾	—	London and York	6¾ 6⅞	6⅞ ¾ ¾
Belfast and Ballymena	3½ 4	3½	Lynn and Ely	4⅜ 5	—
Blackburn & Accrington	5⅜ 6	—	Lynn and Dereham	1⅝ 1¾	—
Blackburn and Bolton	3⅜ 4	—	Leeds and West Riding	5⅞ 6¼	—
Blackburn and Preston	14⅜ 15	14¾	Limerick and Waterford	4⅜ 5	4¾
Birkenhead, Manch., &c.	7⅛ 7⅜	—	Manchester and Goole	⅜ ½ dis	—
Birming. & Gloucester	132 134	—	Manchester & Birming.	62¾ 63¾	—
Bolton, Wig., & Liverp.	7¾ 7⅝	7⅝ ¾ ¾	Manch., Bolton, & Bury	130 131	—
Bristol and Exeter	82¾ 83½	—	Manch. & Rossendale	10⅞ 11¼	—
Bristol and Gloucester	60 61	—	Manchester & Buxton	3½ 3¾	—
Caledonian	7⅛ 7⅜	7⅜ ¾ ¾	Manchester and Leeds	138 140	—
Cambridge and Lincoln	3¾ 3⅞	3¾	Midland Stock	126¾ 127¼	127¼
Chester & Birkenhead	38¾ 39¾	—	Mullingar and Athlone	3¾ 3¾	3¾
Chester and Holyhead	8 8¾	8¾ ¾	Newcastle and Berwick	14¾ 15	14 15
Churnet Valley	7¾ 8⅛	8 7⅝	Newcastle and Carlisle	122 124	—
Cork and Bandon	3¾ 3¾	—	Newcastle & Darlington	69 71	—
Cork & Limerick, Direct	1¾ 1⅝	—	North British	12¾ 13	13
Direct Northern	2 2⅛	—	North Kent	2⅝ 3	—
Dublin and Belfast	5¾ 6⅜	6	North Union, Stock A	137 139	—
Dublin and Cashel	11¾ 12¾	—	Ditto ditto B	81 82	—
Dublin and Galway	3¾ 3¾	3¾ ¾	North Wales Mineral	11¾ 11⅝	—
Dublin and Drogheda	77¾ 78½	—	Norwich and Brandon	16 17	—
Dundalk & Enniskillen	3 3½	3	Oxford, Worc., & Rugby	3¾ 3⅝	3¾ ¾
Dundee and Perth	3¾ 3¾	—	Preston and Wyre	22¾ 23	—
Eastern Counties	17¾ 17⅝	—	Scottish Central	4 4¼	4¼
Edinburgh and Glasgow	61 62	—	St. Helens & Runcorn G.	23¾ 24¼	—
Edinburgh & Granton	14¾ 15¾	—	Sheffield and Lincoln	1¾ 1⅝	—
Edinburgh & Northern	1⅞ 1⅜	1⅞	Sheffield & Manchester	105¾ 106¼	—
Ely and Bedford	1⅜ 1⅝	—	Shrewsbury & Gr. Junc.	5¾ 5⅝	5¾
Glasgow, Dumfries, &c.	⅞ 1	¾ ¾	Shrewsb. Wolverh., &c.	6¾ 6⅝	—
Glasgow and Greenock	15¾ 16	—	South-Eastern	41¾ 41⅝	41¾
Glasgow, Paisley, & Ayr	65 66	—	South Wales	5¾ 5⅝	—
Grand Junction	226 228	226	Trent Valley	19¾ 19⅝	19¾ ¾
Gt. Grimsby & Sheffield	2¾ 2⅝	—	Ulster	44¾ 45¼	—
Gt. North of England	180 182	—	West Yorkshire	3¾ 3⅝	—
Great Western	180 183	—	Yarmouth and Norwich	27¾ 28⅛	—
Harwich	1¾ 1⅝	—	York & North Midland	105¾ 107¼	—
Huddersfield and Manch.	5¾ 6	5¾ ¾	York and Selby	68 70	—
Huddersfield & Sheffield	4¾ 4¾	—	Wexford and Carlow	2¾ 3	2¾
Hull and Selby	75 76	—			
Kendal & Windermere	4 4¼	—	Boulogne and Amiens	5¾ 5⅝	5¾
Kilkenny Junction	1⅜ 1⅝	—	Con. Central of France	13¾ 13⅝	13¾
Lancaster and Carlisle	29 29⅜	—	Lyons and Avignon	2¾ 2⅝	2¾
Lancaster and Preston	50¾ 51¼	—	Northern of France	5¾ 5⅝	5¾
Leeds and Bradford	20¾ 21¾	—	Orleans, T., & Bordeaux	6¾ 6⅝	—
Leeds and Dewsbury	3¾ 4	—	Paris and Lyons	3¾ 3⅝	3¾
Leeds and Thirsk	3¾ 4	—	Paris and Orleans	45 45¾	—
Liverpool & Manchester	206 208	—	Paris and Rouen	42¾ 43⅝	—
Liverpool and Preston	3 3¼	3¼	Paris and Strasburg	2¾ 3	—
London & Birmingham	237¾ 239¼	—	Rouen and Havre	28¾ 29¼	29
London and Blackwall	7¾ 7⅝	—	Sambre and Meuse	3¾ 3⅝	—
London and Brighton	58¾ 59¼	58¾ 9 8¾	Strasburg and Basle	12¾ 13⅛	—
London and Croydon	18¾ 19	—	Tours and Nantes	2 2¼	2¼
London and Portsmouth	2 2¼	—	Jamaica	27 28	—

13, Castle-street and Stock Exchange, Liverpool. JOHN GREAVES.

LEEDS.—Our usual Share Market Report has not reached us this week.

HULL, THURSDAY.—The greatest excitement prevails respecting the long-delayed report of the Board of Trade upon the York lines. The Hull and Burlington Branch (Hull and Selby halves) having passed Standing Orders, are dealt in, we might almost say, indifferently with the old stock of the Hull and Selby. Brightons are much improved in character, mainly (solely, perhaps) owing to Mr. Peter Clarke's engagement with that company, in which the germ of future prosperity is observed. Berwicks and Barnsley Junctions seem below their value; Great North of Englands much wanted; Hull and Gainsboroughs freely offered at ¼ premium. We beg leave to hand you our latest quotations:—Birmingham and Gloucesters, 132*l.* to 134*l.* per share; Blackburn and Preston, 14¾*l.* to 14¼*l.*; Barnsley Junction, 6¾*l.* to 6¼*l.*; Eastern Counties, 17¾ to 17⅝*l.*; Gt. North of England, 180*l.* to 185*l.*; Hull and Selby, 75*l.* to 76*l.*; Leeds and Bradford, 21¾*l.* to 21¼*l.*; Lancaster and Preston, 50¾*l.* to 51¼*l.*; London and Brighton, 58*l.* to 58¾*l.*; London and York, 6¾*l.* to 7¼*l.*; Midland, 126*l.* to 128*l.*; Newcastle and Carlisle, 122*l.* to 124*l.*; Newcastle & Darlington Junction, 49*l.* to 51*l.*; North British, 12¾*l.* to 13¼*l.*; Norwich & Brandon, 15¾*l.* to 16¼*l.*; Yarmouth and Norwich, 26*l.* to 28*l.*; York and North Midland, 103*l.* to 105*l.*—Hull Dock Company, 1620*l.* to 1640*l.*; Hull Flax and Cotton Mills, 155*l.* to 160*l.*—Hull Banking Company, 9¼*l.*

EDINBURGH, THURSDAY.—Aberdeen, 2¼*l.*; Arbroath and Forfar, 15*l.*; Ballochney, —*l.*; Caledonian, 7¼*l.*; Dundee and Arbroath, 23¼*l.*; Dundee and Perth, 3¼*l.*; Dalkeith and Leith Branch, 7*l.*; Edinburgh and Glasgow, 65¼*l.*; Edinburgh, Leith, and Granton, 15*l.*; Edinburgh and Northern, 1¼*l.*; Glasgow and Ayrshire, 65¼*l.*; Glasgow and Garnkirk, 28*l.*; Glasgow and Greenock, 15*l.*; Glasgow, Dumfries, and Carlisle, 1¼*l.*; Monkland and Kirkintilloch, 30¼*l.*; North British, 14*l.*; Scottish Central, 4*l.*; Slamannan, 16*l.*; Wishaw and Coltness, 39*l.*

COAL MARKET, LONDON.

MONDAY.—Price of coals per ton at the close of the market:—Adair's Main 16—Carr's Hartley 16 6—Eden Tanfield 16 6—Hastings' Hartley 16 and 16 6—Holywell Main 17 and 17 6—Nelson's West Hartley 16 9—New Tanfield 16 6—Old Pontop 16—Ravensworth's West Hartley 16 6—Tanfield Moor 19 6—Townley 16—West Wylam 16 3—Wylam 16—Wall's End Clark and Co. 15 6—Clennell 15 6—Heaton 18—Hedley 17—Hotspur 17—Killingworth 17 6—North Durham 16—Braddyll's Hetton 20 6—East Hetton 16 6 and 16 9—Hetton 20 3 and 20 6—Lambton 20 and 20 3—Lumley 18—Sherbourne 20—Stewart's 20 6—Kelloe 18 9—Brown's Deanery 18—Richardson's Tees 17—Tees 19 6—West Hetton 17—Brynamman 20 6—Cowpen Hartley 17—Lewis's Merthyr 21—Morgan's Stone 22.—Ships arrived, 102.

WEDNESDAY.—Buddle's West Hartley 16 6—Carr's Hartley 16 6—Holywell Main 17—Nelson's West Hartley 16 6—New Tanfield 16 3—Ord's Redheugh 15—Tanfield Moor 19 6—Taylor's West Hartley 16—West Hartley 16 6—West Wylam 16 3—Wylam 16—Wall's End Clark and Co. 16 3—Clennell 16 3—Gosforth 18—Killingworth 17—Braddyll's Hetton 20 3—East Hetton 17—Houghall 18 6—Hetton 20 3—Hylton 18—Lambton 20—Lumley 18 6—Russell's Hetton 19 3—Whitwell 18 6—Caradoc 20—Hartlepool 20—Kelloe 18 6—Leasingthorne 19—South Kelloe 18 6—Adelaide 19 6—Seymour Tees 18 6—South Durham 18—Tees 19 6—Tenant's 17—Brynamman 20—Cowpen Hartley 17—Morgan's Stone 22—West Hartley Netherton 16 6.—Ships arrived, 16.

FRIDAY.—Adair's Main 16 6—Buddle's West Hardey 16 6—Carr's Hartley 16 6—Hastings' Hartley 16—Holywell Main 17 6—New Tanfield 16 3—Old Pontop 15 6—Ord's Redheugh 15—Old Tanfield 16—Tanfield Moor 19 6—West Hartley 17—West Wylam 16 6—Wall's End Clarke and Co. 16—Clennell 16—Elm Park 17—Heaton 18—Hilda 17 6—Eden Main 18 6—Braddyll's Hetton 20 3—Hylton 17 6—Lambton 20—Lumley 18—Morrison 17 3—Russell's Hetton 19 6—Stewart's 20 3—Caradoc 20—Heugh Hall 18 3—Kelloe 19—Leasingthorne 19—Adelaide 19 6—Brown's Deanery 18 6—Evenwood 15 6—Tees 19 6—Anthracite 20—Cowpen Hartley 17—Lewis's Merthyr 21—Morgan's Stone 21 9—Snapethorpe 17 6.—Ships arrived, 4.

LONDON GAZETTE—BANKRUPTS.

TUESDAY.—E. Closson, Lower Holborn, stationer—J. Peart, Birley, Brompton-row, Brompton, plumber—I. Hagg, Colchester, tailor—T. Wilkinson, Hartlepool, draper—W. Hall, Claypath, near Durham, grocer—T. Rees, Liverpool, porter brewer—J. Scott, Liverpool, paper dealer—S. Crew, Bristol, coal merchant—J. Hutchings, Bath, bootmaker—W. Knight, Manchester, oil cloth manufacturer—J. Schofield, Oldham and Greenacres-moor, Lancashire, grocer—J. Holman, Exeter, victualler—T. Griffiths, jun., Wem, Shropshire, wine merchant.

FRIDAY.—W. Dale, London-wall, City, bootmaker—L. D. Dolbell, Lower Mitcham, Surrey, dyer—J. Crabb, Great Toy, Essex, bricklayer—C. Ransford, Stoneley, Middlesex, grocer—A. Wyatt, Badmess-mews, Well-street, St. James's, licensed victualler—Lewis George, Dow-ham-road, Kingsland-road, shawl warehouseman—W. Beines, Osnaburgh-street, New-road, marble merchant—F. Cornesick, Beddington, Yorkshire, innkeeper—G. Samson, Weymouth, Dorsetshire, corn dealer—T. Fenn, Wootton Bassett, Wiltshire, grocer—J. Wells, Winchcomb, Gloucestershire, common carrier—C. Thornton, Huddersfield, Yorkshire, stationer—W. Reeves, Walcot, Somersetshire, coach builder—T. Langston, Manchester, share broker—J. Taylor, Higher Walton, Cheshire, farmer—J. Danks, Birmingham, wharfinger.

JOINT-STOCK BANKS.

Shares.	Company.	Paid.	Price.	Shares.	Company.	Paid.	Price.
22,500	Australasia	£10	46 ⅜	60,000	London Joint-Stock	10	14¾ 15
20,000	British N. American	50	45 ⅜	40,000	Provincial of Ireland	25	44¾
5,000	Ceylon	20	14	20,000	Ditto. New	10	17½
1,000	Commer. of London	200	200½	20,000	National of Ireland	17½	16¾
20,000	Colonial	25	14 15	10,000	Natl. Prov. England	35	37½
10,000	Canada Bank	32½	42¾	10,000	Ditto, New	10	9¼
4,000	Ionian	25	25	52,000	Union of Australia	25	27 ¼
20,000	London and County	20	21½	8,000	Ditto ditto	2½	2¾
40,000	London & Westminster	20	27¾ 8	60,000	Union of London	10	12¾

COPPER ORES

Sampled Feb. 5, and Sold at Andrew's Hotel, Redruth, Feb. 20, 1845.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
Wh. Maria	194	£10 18 6	South Towan	111	£4 9 6
ditto	192	11 10 6	ditto	20	7 0 0
Tresavean	110	3 6 6	Wh. Lydia	74	3 11 6
ditto	92	4 4 6	Par Consols	80	4 5 0
ditto	40	4 19 6	ditto	77	4 4 6
ditto	28	2 14 6	ditto	48	8 9 0
West Caradon	104	6 0 6	Holmbush	97	9 13 0
ditto	63	5 19 6	ditto	95	5 10 6
ditto	38	3 17 6	Bedford United	111	6 1 0
ditto	25	9 10 6	Wh. Gorland	51	4 17 6
Fowey Consols	80	4 0 6	ditto	10	1 19 6
ditto	75	4 11 0	Regent Consols	2	3 11 6
ditto	67	5 5 0			

TOTAL PRODUCE.

Wh. Maria	386	£4332 5 0	Par Consols	205	£1070 18 6
Tresavean	270	1029 15 0	Holmbush	192	1460 18 6
West Caradon	230	1288 8 0	Bedford United M.	111	671 11 0
Fowey Consols	222	1015 0 0	Wh. Gorland	61	268 7 6
South Towan, Wh. Lydia	205	901 5 6	Regent Consols	2	7 3 0

Average standard, 93*l.* 16*s.*—Average produce, 9¼.—Average price per ton, 6*l.* 8*s.* 0*d.*—Quantity of ore, 1884 tons.—Quantity of fine copper, 184 tons 14 cwt.—Amount of money, 12,145*l.* 12*s.* 0*d.*—Average standard of last sale, 109*l.* 15*s.*—Average produce ditto, 7¾.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal Company	63	£ 376 8 6
English Copper Company	178	883 2 0
Vivian and Sons	369¾	2165 16 2
Freeman and Co.	277¾	2259 4 2
Grenfell and Sons	353	1784 2 6
Sims, Willyams, Nevill, Druce, and Co.	217	999 10 6
Williams, Foster, and Co.	440¾	3577 8 2
Totals	tons 1884	£12,145 12 0

Copper ores for sale on Thursday next, at Farquharson's Hotel, Truro.—Mines and Parcels.—United Mines 1350—South Caradon 534—Halleabeagle 270—Trethellan 253—Fowey Consols 225—Grambler and St. Aubyn 169—Wheal Prudence 144—Tresavean 138—Treleigh Cons. 120—North Downs 102—Creegbraws 81—Pensthruthal 79.—Total, 3265.

Copper ores for sale on Thursday week, at Sarpell's Hotel, Pool.—Mines and Parcels.—North Roskear 1144—Consolidated Mines 719—Tincroft 510—East Wheal Crofty 346—Dolcoath 300—Wheal Providence 275—South Wheal Basset 260—South Roskear, &c., 245—Par Consols 206—Fowey Consols 204—Wheal Harriet 115—West Wheal Jewel 97—Wheal Trewavas 80—South Wheal Francis 75—Wheal Clifford 55—Godolphin 54—Tretoll 51—Harvey's Dross 31.—Total, 4767 tons.

COPPER ORES

Sampled on the 29th of January, and sold on the 19th inst. at Swansea.

Mines.	Tons.	Prod.	Stand.	Price.	Mines.	Tons.	Prod.	Stand.	Price.
Cobre	119	12⅞	88¾	9 3 6	Knockmahon	34	6¾	104¾	4 8 6
ditto	118	12⅜	88¾	9 3 0	Cuba	100	17⅛	84	12 3 0
ditto	91	12⅜	88¾	9 3 0	ditto	92	14⅜	85¾	10 1 0
ditto	67	20¾	83¾	15 1 6	ditto	91	14⅜	86¾	10 1 0
ditto	57	22	83¾	16 3 6	ditto	81	17⅜	83¾	12 2 0
ditto	11	16¾	85¾	11 13 6	ditto	71	15⅜	83¾	10 18 0
ditto	92	21	83¾	15 7 0	Santiago	100	16⅜	85¾	11 14 0
ditto	90	12⅜	89¾	8 12 6	ditto	95	17⅜	84¾	12 3 6
ditto	72	12⅜	89¾	8 12 6	ditto	86	17⅜	83¾	12 8 6
ditto	12	14¾	86	10 4 6	ditto	83	16⅜	85¾	11 14 0
ditto	70	11⅜	89¾	8 3 6	ditto	82	17⅜	83¾	12 6 0
Knockmahon	129	7⅜	99¾	5 7 0	S. Jose, Cobre	82	15	83¾	10 5 0
ditto	112	10⅜	97¾	7 12 6	ditto	71	15¾	83	10 8 0
ditto	99	7⅜	102¾	5 14 0	Davies's Ore	40	3	138¾	1 18 0
ditto	90	7⅜	103	5 12 0	American	3	14¾	88	10 6 0

Total tons, 2340.—Total amount, £22,200 14*s.* 6*d.*

TOTAL PRODUCE.

Cobre	799	£8569 0 0	San Jose in Cobre	153	£1578 18 0
Knockmahon	464	2762 18 0	Davies's Ore	40	76 0 0
Cuba	435	4808 3 0	American	3	30 18 0
Santiago	446	5374 17 6			

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
English Copper Company	268	£2788 14 6
Freeman and Co.	3	30 18 0
P. Grenfell and Sons	508	5849 9 6
Sims, Willyams, Neville, Druce, and Co.	162	1397 5 0
Vivian and Sons	568	6226 13 0
Williams, Foster, and Co.	831	6907 14 6
Total	2340	£23,900 14 6

Copper ores for sale March 5.—Cuba 61—57—53—54—53—52—14—83—31—29. Santiago 105—100—95—81—73. Cobre 105—98—34—76—64. Bacuranao 90—56—48. Knockmahon 120. San Jose in Cobre 56—23—22. Ballymurtagh 38—25—19. Vigra and Cloga 53—16—2. Carnarvon 33. Midland 12—10.—Total, 1956 tons.

Copper ores for sale March 12.—Cobre 935—Bearhaven 416—Lackamore 56—Copiapo 38.—Total, 1445 tons.

BLACK TIN

Sold on the 14th February, 1845.

Mines.	Tons.	Price.	Amount.	Purchasers.
Carn Brea	13½	39 15 0	536 12 6	De Tastet and Co.
ditto	2½	27 10 0	68 15 0	De Tastet and Co.
ditto	2½	26 0 0	71 10 0	De Tastet and Co.
Total tons, 18¾.—Total amount, 676*l.* 17*s.* 6*d.*				

LATEST CURRENT PRICES OF METALS.

LONDON, FEBRUARY 21, 1845.

	£ s.	£ s. d.		£ s.	£ s. d.
SPELTER—On spot, p. ton	0 0	22 5 0	STEEL—Swedish faggot	0 0	19 0 0
For arrival	0 0	22 0 0	COPPER—Sheet & sheathing, p.lb.	0 0	0 9¾
ZINC—English sheet	0 0	30 0 0	Old	0 0	0 8¾
QUICKSILVER p. lb.	0 0	0 4 6	Cake p. ton	0 0	84 0 0
IRON,* in London:—			Tile	0 0	83 0 0
English bar, bolt, and square, p. ton	8 10	8 15 0	Chili	0 0	71 0 0
Nail rods	0 0	9 5 0	TIN—English block	0 11	3 13 0
Hoops	10 10	11 0 0	bar	0 0	3 14 0
Sheets, single	11 10	12 0 0	Foreign, Banca	0 0	3 8 0
double	0 0	12 0 0	Straights	0 0	3 5 0
treble	0 0	13 10 0	Peruvian	1 7	1 13 0
Rails in Wales	8 15	9 0 0	TIN PLATES†—IC p. box	1 8	1 15 0
Bars, in Wales	8 0	8 10 0	IX	1 14	2 1 0
Pig, No. 1, Welch	0 0	5 10 0	LEAD—English p. ton	0 0	16 15 0
No. 1, Clyde	4 8	4 10 0	Liverpool	0 0	16 10 0
Foreign—Swedish	0 0	12 0 0	Spanish (London)	0 0	16 10 0
CCND	0 0		American	0 0	
PSI	0 0	16 0 0	(Liverpool)	0 0	
Gourieff	0 0		Sheet (London)	0 0	17 10 0
Archangel	0 0		Red	21 10	18 10 0
STEEL—Swedish keg	0 0	18 0 0	White	0 0	23 0 0
			Patent shot	0 0	19 15 0

* Iron 5*s.* to 7*s.* 6*d.* per ton less at Liverpool. † 1*s.* per box less at Liverpool.

REMARKS.—Metals generally are very firm, with a tendency to advance, except copper and spelter, which are dull of demand.—The reduction of duty on foreign iron and steel has set these articles on the advance rapidly, conjoined with the rise of 1*l.* in Staffordshire.

THE METAL TRADE—*(From a Correspondent.)*—The prices of iron (English), as given by you last week, are 10*s.* per ton too low—Bars in London should have been quoted as 8*l.* 10*s.*, and in Wales at 7*l.* 10*s.*; and this week you will find them, on inquiry, to be even 10*s.* per ton higher still—viz., 8*l.* in Wales, and 9*l.* in London; rods, rails, and other articles in the same proportion. In fact, the immense demand for iron has forced the price up 10*s.* per ton nearly every week, and continues so to do. Tin plates have also advanced at least 3*s.* per box; and Scotch pigs cannot now be bought below 2*l.* 5*s.* or 2*l.* 10*s.* per ton at Glasgow, and only in limited quantities. Cash down now for distant delivery. G. W.

THE IRON TRADE—GLASGOW, FEB. 15.—A most important feature in the demand for Scotch pigs, and a sufficient cause for further considerable advance, will be found in the transactions which have taken place this week in Liverpool. The Bowling Iron Company effected a purchase of 6000 tons on Monday last; and it is said that the Lowmoor Company also made a similar bargain—the former, however, is certain. That these wealthy and extensive manufacturers of iron have not bought on speculation, is a fact which is now fully ascertained; but that they were compelled to do so by dire necessity, their own produce being quite insufficient to enable them to carry on their works. Dealers have now obtained 85*s.* net, and the makers, we understand, are holding for 90*s.* Bar-iron is firm at 8*l.*, at which sales are reluctantly made by the makers; and, on accounts brought by the American packet to-day, numerous purchasers will be in the market immediately.

— FEB. 20.—At the monthly meeting of the ironmasters, held here yesterday, the advanced price of 4*l.* 10*s.* (pig-iron) was firmly maintained; and, from the many pressing orders in the market for immediate completion, and for export, the feeling of the meeting betokened a further advance.

BIRMINGHAM, FRIDAY EVENING.—A further advance of 20*s.* per ton in the price of iron was declared by most of the large houses in the South Staffordshire district on Thursday last. This rise, notwithstanding the recent and rapid advances, did not, however, come altogether unexpectedly on the trade, as the principal ironmasters have for some time past declined to execute orders at the former prices. No fresh orders to any extent will, we believe, now be taken, unless at the advanced rates, and even these will be difficult to execute, as we are informed many of the manufacturers have more orders on hand than they can supply for the next twelve months. Whether the rise will be a permanent one, we cannot, of course, undertake to say, but the trade is regarded as in a most unsettled and feverish state, from the uncertainty as to the continuance of present prices. As might be expected, under these circumstances, a corresponding advance has taken place in nearly all descriptions of manufactured goods, including nails, in which a rise of 15 per cent. has been declared. We are glad to find, as regards the nailers—a class of persons whose labour has been greatly depressed—an advance of 10 per cent. on their wages was decided on at a meeting of the masters held at Dudley on Tuesday. Of manufactured goods for the foreign market, we may observe that the orders are comparatively light, the great demand being for iron rails, chairs, &c.—*Birmingham Journal.*

EXPORTATION OF THE PRECIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for the week ending Feb. 8:—

Silver bars to Rotterdam	52,000 ounces.
Silver coin to ditto	6,000 "

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
235	Andrew and Boscawen	23	30
96	Bell	—	17½
4000	Bedford	2½	3
100	Bodallack	175	500
20000	British Iron	70	10½
8000	Blaenavon	50	10¾
120	Brewer	—	70
5000	Con. Tretoll Mining Ass.	2½	⅛
128	Cosheen	20	200
114	Charlestown	—	200
3200	Cornubian Lead Co.	3	6¼
128	Comers	—	35
2560	Cook's Kitchen	—	15
1000	Carn Brea	15	90
1000	Callington	16	25
256	Caradon Wh. Hooper	1	6
128	Caradon Consols	—	150
256	Caradon Copper Mine	1	4
128	Caradon Mines	1	50
256	Caradon United	1	12
128	Creeg Braws	120	100
1900	Conbumatin	5½	10
1000	Carn Perron	—	7
240	Craddock Moor	1	50
186	Dolcoath	—	100
1000	Dhurode	2	5
10000	Durham County Coal	45	7¾
128	East Pool	5	70
94	East Wheal Crofty	—	450
128	East Wheal Rose	50	1500
512	Fowey Consols	—	120
256	Grambler & St. Aubyn	—	90
100	Great Consols	1000	900
1000	Godolphin	—	35
256	Gonamena	1	100
10000	Hibernian	12½	1
1000	Holmbush	14	38
128	Halleabeagle	—	50
1000	Hanson	5	5
800	Hawkmoor	1	2
160	Levant	—	150
128	Lanarth & Penstruthal	—	150
1000	Lewis	3	5
128	Ludcott	3	4
20000	Mining Co. of Ireland	7	13¼
2800	Marke Valley	10	5
70	North Roskear	—	500
200	North Holmbush	—	15
100	North United	20	20
256	North Wheal Rose	19½	85
256	North Treburget	1	5
15000	Northern Coal Co.	23	2
128	Newquay	12	8
600	Old Delabole Slate Co.	25	45
128	Par Consols	—	1100
256	Penhallow Moor	15	26
10000	Rhymney Iron	50	21
256	Rose Consols	10	4
800	South Towan	10	1¼
57	Spearn Moor	70	—
1000	Stray Park	43	20
128	South Wheal Basset	—	290
128	South Caradon	5	660
256	St. Austell Consols	4	13
256	South Wheal Rose	2	5
128	South Yeoland	9	9
120	Trethellan	5	105
128	Trewavas	—	60
96	Treavean	10	350
128	Tregardock	5	8
128	Tokenbury	80	90
256	Trenow Consols	—	135

BRITISH MINES—*continued.*

Shares.	Company.	Paid.	Price.
120	Treviskey and Barrier	61	240
5000	Treleigh Consols	5½	3
9600	Tamar Consols	3	1
1000	Tincroft	7	16
128	Trewellard	19	8
4000	United Hills	5	4
100	United Mines	1000	900
6000	Wicklow Copper	5	19
512	West Fowey Consols	40	36
384	Wheal Franco	20	3
128	Wheal St. Andrew	65	1
127	Wheal Virgin	—	6
128	West Caradon	40	750
50	Wheal Vor	500	—
3845	West Wheal Jewel	10¼	7
120	West Trethellan	5	50
128	Wheal Rose	30	6
256	West Wheal Tolgus	6	1
1000	Wheal Harriet	¼	3
128	Wheal Penrose	—	10
128	Wheal Providence	16	100
68	Wheal Clifford	—	500
128	Wheal Albert	10	13
128	West Basset	10	60
128	Wheal Acland	13	12
123	Wheal Sisters	29¼	65
99	Wheal Seaton	150	600
123	Wheal Henry	—	30
256	Wheal Hope	7	7
4000	Wheal Martha Consols	3	1
130	Wheal Trelawny	10¼	120
200	Wheal Prudence	30	26
256	Wheal Norris	1¼	1
256	Wheal Treven	4	5
107	Wheal Trevilson	10	15
128	Wheal Catherine	5¼	15
256	West Providence	—	7
123	Wheal Robins	18	30

The Mining Journal.

No. 496.] ENLARGED SHEET. [FEB. 22.

SIR W. BURNETT'S PATENT—THE CHEAPEST AND BEST PROCESS for the PRESERVATION OF TIMBER, CANVAS, CORDAGE, COTTON, WOOLLEN, &c.—LICENSES GRANTED to NOBLEMEN and GENTLEMEN to use the preparation; and to others, for the purposes of trade, on advantageous terms

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SEYSSEL ASPHALTE COMPANY—"CLARIDGE'S PATENT."—*Established* 1838.

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Among the various uses to which it can be applied, the following may be enumerated:—For foot-pavements, public and others; in the carriage approach to mansions, garden-walks, and terraces; the flooring of kitchens and other basement offices; also of coach-houses and stables, dog-kennels, barn-floors, cow-houses, piggeries, poultry-houses, tun-rooms, and maltings. For roofing, covering of railroad and other arches, the lining of underground cellars near rivers, to prevent the ingress of the tides; also in covering the ground line of walls, to prevent damp rising *(this application of the Asphalte of Seyssel is particularly recommended by the Commissioners of the Fine Arts)*, thereby rendering the basement stories in the worst situations both dry and warm. It is an excellent cement, as applied to docks, breakwaters, or walls built for resistance to the encroachments of the sea. For lining of tanks, fish-ponds, and other hydraulic purposes. 45

I. FARRELL, Secretary,
Seyssel Asphalte Company's Works, "Claridge's Patent,"
Stangate Depôt, London,

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BY HER MAJESTY'S ROYAL LETTERS PATENT.

SMART'S ELLIPTICAL CONVEX METALLIC FLOATS, FOR STEAM-SHIPS, as applied to the Bristol and Dublin steamer *SHAMROCK*, and to the *SWIFT*, between Newport and Bristol; and also to the *OSPREY*, running between Bristol and Waterford. The patentee has now the satisfaction to announce, that, in addition to the ships already named, he has granted a LICENSE to the Bristol General Steam Navigation Company to USE his PATENT FLOAT in all their steam-ships, comprising the Dublin, Cork, Waterford, and the various channel port steamers, varying in power from *forty* horses to *two hundred* each.

The numerous ADVANTAGES attending this valuable invention may be seen below:

1. The appearance of these floats is light and elegant.
2. Their durability and stability are indisputable, as may be instanced by the *Shamrock* steamer, which has been fitted with them for nearly twelve months, and has since steamed *nearly five thousand miles*. The floats are now as firm and good as they were the first day.
3. Vibration is reduced so as to be scarcely perceptible; thus, the engines are eased, and both they and the ship suffer less wear and tear; and, from their peculiar form, they are strikingly advantageous in cases of strong head wind and heavy sea. Backwater and undulation is also reduced to its smallest quantum, and thereby lessening the chance of accident to small boats, barges, &c., which has hitherto been consequent on the operation of the common paddle-float, particularly in crowded rivers.
4. They more readily arrest the progress of a ship in chances of a collision, the concave side taking the water when this operation is performed. This is of great importance in preventing collisions, or backing off a shore.
5. They are very simple, and are easily applied to any paddle-wheel, at nearly the same cost as the common float, and THEY INCREASE THE SPEED MORE THAN ONE KNOT PER HOUR.

For license to use them (for which the charge is 10s. per horse-power), apply to the patentee, Mr. ROBERT SMART, 5, Grenville-place, Hotwells, Bristol, who will personally attend the fitting, if required, his travelling expenses being paid. 46

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*** Testimonials of the highest order, on application to the patentee or his agents.
Bristol, December, 1844.

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES, AND CLOCKS.—E. J. DENT, 82, Strand, and 33, Cockspur-street, watch and clock maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each. 47

DENT'S PATENT DIPLIEDOSCOPE, or meridian instrument, is now ready for delivery. Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

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THE ARCHIMEDIAN SCREW APPLIED TO RAILWAY PROPULSION.

Within the last week we have been favoured with a view of a very ingenious discovery, for applying the Archimedian screw to the purposes of railway locomotion: our readers will at once perceive the originality of the invention, and, if satisfactorily established, its high utility and importance. The model is in every respect admirably adapted to explain the principles, the working, and the minutiæ of the design, it only remains to be proved whether trials on a larger and more practical scale will confirm the success evinced in the experiments, and prove its feasibility. Annexed is a description of the plan in all its bearings; we give it at present unattended by any observations of our own, believing that by those means justice will more completely be done the invention. After the public has thus had an opportunity of forming its own opinions on the merits or objections of the proposition, we shall recur to the subject more unreservedly and in detail.

The invention consists simply in a screw, called the screw propeller, laid down continuously in the middle of the track, fixed in the direction of its length and turned under its axis, by steam or other power, communicated to it at proper intervals, say every three miles along the line. This screw may be of any given diameter, say from 18 to 24 inches, formed in lengths of from 12 to 15 feet each, and consists of a shaft of cast or rolled iron-tubing 4 inches diameter, supporting by means of wrought-iron arms keyed on the shaft, a rolled-iron spiral, which is bolted to the ends of the arms; the construction is such as to afford perfect confidence in its strength for its intended purpose. The lengths of shafting are connected by doublings, that allow a sufficient play to meet any accidental irregularity on the line, and also to permit them to be laid down on the quickest curves that are allowable on railways, with scarcely any calculable amount of friction; each length rests on turned bearings in proper metal pedestals, secured to the cross sleepers of the railway.

The power is communicated to the screw by means of spur wheels, turning a pinion fixed on one end of each line of shafting of one and a half mile in length; it is situated so as to drive two such lines, that is, one in each direction from it, and the gearing is so contrived as gradually to bring the screw propeller into motion, and also to transfer the power from one line to the other without stopping the train. The motion of the screw propeller is communicated to the trains by means of a pair of wheels or rollers, so attached to the framework of the leading carriage of the train as to bear upon the rim or spiral rail that forms the thread of the screw, and thus carries on the train forward; the other acts as a check-wheel and prevents the train from moving with an unequal motion or running forward by acquiring acceleration.

The screw propeller is capable of acting in both directions; and, on the motion being reversed, that which before acted as a check-wheel becomes the propelling wheel, and *vice versa*. These wheels, which form the only connection between the trains and the propeller, are perfectly under the control of the conductor, who, by turning the handle of the vertical screw, can press the wheels when he sees it necessary with more power upon the screw propeller, or in a moment disengage them from it; and, having done so, can instantly apply the break to the bearing wheels, by continuing the movement of the vertical screw and thus stop the train at any point without interfering with the motion of the propeller.

The advantages proposed to be derived from this invention, are—economy in the construction of railways, from the facility it affords for ascending inclined planes of almost any angle, and the consequent reduction in cuttings, embankments, bridges, &c.; also in the use of light rails instead of the heavy rails required for the locomotive system; also, in the use of lighter carriages than those at present in use, and hence less useless load; economy of power for locomotion by the use of fixed engines, or water power in the place of locomotive-engines, and the consequent avoidance of the expense of erection and support of those costly establishments required for the latter. Injury to passengers, by collision or the running of the trains off the rails, being rendered impossible.

With respect to the amount of friction due to such a line of shafting, and also its power of resistance to torsion, as regards the former, many experiments have been made, whose results were sometimes favourable and at others the reverse. The most unfavourable was one consisting of four different lengths, at right angles to each other, and coupled by bevel-wheels; the result was something less than 1-18th of the load, or 120lbs. to the ton; this is taken, being the least favourable, as the standard from which the following calculations are taken.

The weight of a mile and a half of the screw propeller, including gearing, will not exceed 80 tons, which, at 120lbs. to the ton, leaves 9600lbs. as the amount of friction; the bearings are 3 inches, and the pinion on the end of the shaft to which the power is applied 18 inches diameter, or as 6 to 1, therefore the power required to turn a line of shafting 80 tons weight from a state of rest applied at the periphery of the 18inch pinion is 1600lbs. or 1-6th of 9600lbs.

The shafting is proposed to be formed of iron tubing 4 inches diameter, and half an inch in thickness; the weight found by accurate calculation, and proved by experiment, as sufficient to twist such a shaft if applied to the periphery of an 18-inch pinion fast on it is 22,196lbs.; now, as half the breaking weight may be applied without producing any deflection, we have a shaft, to which we may apply 11,100lbs. at the periphery of an 18-inch wheel with perfect safety, without producing any torsion whatever. Now the power required to turn a mile and a half of screw propeller from a state of rest is 1600lbs., which is about 1-7th of the power that may with perfect safety be applied to the 18-inch pinion, or in other words, the shafting might be extended to seven times the length I have proposed without being subjected to any torsion whatever.

With respect to the applicability of this system to curves, if the propeller be laid down on a curve of 1320 feet, or one quarter mile radius, and the shafting in lengths of 12 feet, it is evident that each length of shafting will form the base of an isosceles triangle, whose sides are 1320 feet and base 12 feet, or as 110 to 1: on calculating the angles at the base of this triangle, it will be found that the friction of the couplings, which are 3 inches diameter, will be something less than 1-36th of an inch, or 1-110th part of 3 inches. Again, although the curve is formed of a series of straight pieces 12 feet long each, yet as the versed sine of the arc of which the 12 feet length forms the chord, is but a small fraction more than one quarter of an inch, it will be seen that so small a deviation from the curve cannot be so much as felt in practice.

As to the power required for this system, it has been shown that 1600 lbs. applied to the periphery of an 18-inch pinion will be sufficient to overcome the inertia of a mile and a half of propeller, and set it in motion round its axis. Now, suppose the pitch of the screw to be 12 feet, then every revolution it makes on its axis impels the train 12 feet; and 154 revolutions per minute will impel the train at the rate of 21 miles per hour. To obtain this speed, a spur-wheel, 5½ times the diameter of the pinion, or 8 feet 3 inches diameter, making 28 revolutions in a minute, is requisite. If this spur-wheel is turned by a 2-feet crank, the radius of the wheel being 4 feet 1½ inch, it follows that, in order to apply a power equal to 1600 lbs. at the periphery of the spur-wheel, we must apply twice and one-sixteenth of that power, or 3300 lbs. to the crank. This power would be afforded by a condensing-engine 24-inch cylinder, 4 feet srtoke, and making 28 strokes per minute, or 18 horses power

The foregoing calculations are made without any reference to the provision spoken of for bringing the propeller gradually into motion; but, as such provision is made, and it is known that half the power that is required to set a machine in motion is sufficient to continue that motion, one-half the power, or 800 lbs., may be safely calculated on as available for the purpose of propelling the trains. As the circumference of the pinion is 4 feet 6 inches, and the pitch of the screw 12 feet, the effect will be as 4½ to 12; and, taking the friction of the train as 9 lbs. per ton, we have a power equal to the propulsion of 33⅓d tons, or eight loaded carriages of more than 4 tons each. But, as one of the great advantages this system possesses over any other is the facility it affords for transmitting a succession of trains at very short intervals, provision may thus be made for the most extensive traffic without increasing the engine-power: for instance,—a train, capable of carrying 50 tons on the present system, could be divided into four trains of five or six carriages each, at ten minute intervals, an arrangement by which 900 tons of food, or 12,960 passengers, might be conveyed in a day of twelve hours, and the expense of locomotion not exceed six shillings per day. This estimate is made, supposing the system applied to any of the present railways; but in any new line, the saving on the rails alone will pay more than one-half the cost of the propeller; and the saving in cuttings and embankments, bridges, &c., will render the formation of railways on this system scarcely more expensive than a common turnpike road.

In addition to the above proposals, there is a provision in this invention for dispensing with the flanges on the bearing-wheels, and also for conveying intelligence from station to station. In this case the bearing saddles are triangles, the full height of the propeller, and a guide rail is laid over the whole length of the propeller; this rail is made of iron tubing, in lengths equal to those of the propeller, and fastened or screwed into sockets, cast on the apex of the triangular bearing saddle; against this guide rail the friction rollers run, and the flanges on the bearing wheels are thus dispensed with; the rails may then be reduced to a flat iron bar, or, if the patent wood will answer, iron rails may be dispensed with, and the trains will run with scarcely any friction or noise. The guide rail being of tubing, it is proposed to conduct signals by it from station to station. The cost of worms for a single mile on the Archimedian system is calculated at 2218*l.*, that of the present locomotive is 2243*l.* The aggregate saving, considering every particular, is estimated at thousands of pounds per mile.

Such is the description of this ingenious discovery, as given by the inventor himself, and such the advantages, he confidently holds out, arising from the system. The patentee is Mr. Isaac Farrell, of Dublin, and the principles of his design are concisely embodied in a letter to Mr. Purcell, chairman of the Great Southern and Western Railway. It has already been inspected by several scientific gentlemen, who, one and all, express their high approbation of its merits and improvements. Before long, we shall take another opportunity of reverting to the subject.

IRISH RAILWAYS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—The great importance of the present subject will, I trust, plead my excuse for dedicating a special and a longer letter to it. Railways in Great Britain are adjuncts of national prosperity, being in truth applications of a new power to enlarge the energies of a great community already advanced to a wonderful pitch of industry, opulence, order, and refinement. England may afford to sport away the burthen of her superfluities in devising innumerable schemes for the employment of capital, and two or three hundred railway companies are but so many sponges to suck up the surplus moisture of the monied world; but Ireland is differently circumstanced—she is, though rich in natural gifts, a poor province in every sense of the two-fold term—poor in the mighty elements of activity, assiduity, prudence, and perseverance—poor in her state of vassalage to false religious feuds (for true religion never dwells with discord)—poor in her absurd assertion of separate rights and interests, instead of wisely and cordially mixing herself with the integral power and progress of the British Empire. I lay no stress upon her lack of pecuniary resources, for Ireland can command wealth whenever she is content to exchange contumacy for tranquillity. I affirm that Ireland's bane is her reluctance to submit to English rule. I am no obsequious eulogist of the mode in which my country has been governed by her conquerors; but conquered she most certainly was by English prowess, and policy maintained what warfare had won. I am led to consider the destinies of nations as appointed by the Most High God, not left to the mere caprice of chance rulers; and I therefore conclude it to be the will of Omniscience that one nation should enjoy sovereignty, and another sink into subjection—aye, and remain in subjection, until raised to parity or pre-eminence through Divine mercy and goodness—not by turbulence or agitation, sedition or rebellion.

If my voice could penetrate to the recesses of my native land, I would proclaim to all classes of her people, that submission to England—albeit, to the errors, prejudices, and haughtiness of England—would be the day-star of dignity, prosperity, and peace to long oppressed and humiliated Ireland! It is the spirit of insubordination, cherished and inculcated by the pseudo patriotism of the Sister Island, that affords a colourable excuse for the austere domination of England; and the real *subalternity*, so to speak, of Ireland is referable to her own false standard of importance.

I am equally opposed to all political partisans or religious sectarists in Ireland, for I find them all adverse to the principle of obedience to the powers that be. The contingent loyalty of the ultra-Protestant is as dangerous to the State as any form of avowed hostility to the establishment—and the Roman Catholic Repealer is in my view nothing more than a mob orator, trading upon the passions of the populace, which he wilily and sordidly inflames. And yet, such is the habitual dislike to quiet subjection, that the most inveterate adversaries become pretended allies, when the policy of the English Government does not square with their respective crotchets. Vain is it, therefore, to attempt the task of pleasing this or that party in Ireland. Her people should be deemed the children of the State, and, *as children*, managed accordingly. Show them kindness, favour, forbearance, and generosity, and you who rule will be recompensed by the gratitude of a people prone to fervid impulses; but, when you legislate, you must not pause to negociate—when you exercise authority, you must do so upon upright general principles, not from a desire to obtain popularity with any of the parties which agitate and perturb Ireland. I wish the scope of this latter remark were more known to our leading statesmen. The great fault of the day is a readiness to depart from sound principles, in order to modify measures in accordance with some popular movement, and the result *is*, a wretched hotch-potch of mutilated truths and monstrous errors. The late Mr. Canning, among his other lofty capabilities, possessed that vital vigour of mind which qualified him to govern and to legislate *for* the people, instead of truckling *to* the people. This is a noble art, which seems well nigh extinct, and which I should rejoice to see resuscitated in the Cabinet and in the Senate.

But I must not be tempted into the depths of dissertation; my business lies with the actual condition of Ireland, and her susceptibility of receiving those astonishing improvements which will ere long alter the aspect of the civilised world. How can Ireland be most benefited by railway communication? I answer, by the promotion, not of railway schemes, but of a railway system. Do not suffer Ireland to be victimised by hosts of lawyers, engineers, and other sons of speculation, belonging to the family of fraud, and whose sole object is to originate lucrative jobs, and to get up shareholding schemes—a goodly banquet for the harpies of the Stock Exchange! My heart's desire is, that *poor* Ireland may not fall into the snare of *rich* England, and permit her highways, the great arterial lines of her land, to be planned by a parcel of paltry attorneys, not conversant with more than a Catchpole's knowledge of topography. Why, I have met solicitors who would propose a railway from Cork to Constantinople, if there was the slightest prospect of securing the preliminary expenses! As England is the Paradise of pettifoggers, let her capitalists fill the pockets of their pet solicitors as bountifully as they like; but I warn my countrymen against the importation of English schemes for Irish railways. Under the mask of infusing English intelligence into the prosecution of Irish improvements, a swarm of locusts will migrate from the field of railway jobbery in England, and fasten upon every region of Ireland, where credulity welcomes cupidity. Railways Ireland requires, and railways she is sure to have; but I call upon the British Government to protect their Irish province from English and Irish associations of adventurers, who, in their reckless rapacity, would cut up the country, till it became fashioned after the figure of a Scotch plaid. Ireland demands railways essentially good, which, in their immediate operation and future extension, shall have the effect of imparting civilisation to her remote and uncultivated districts. There must be more than mercantile speculation—there must be sound political wisdom presiding over the suggestion of routes of railways. What can a smug solicitor, peering from behind a desk, in a third story of Pump Court, know of Ireland—her evils, her wants, or her popular peculiarities? and, how can a London *millionaire*, who has amassed in some oil-shop or cotton warehouse the wealth which he seeks to invest in railways—how, I ask, can such a merely monied man, who now, for lucre's sake, takes a Cockney concern in road-making, to serve the poor *Hirish*—form the slightest conception whether his opulence will prove a

blessing or a curse to Ireland? There is nothing radically worse in the character of legal practitioners or shop-keeping speculators than is traceable in other men; but their habits of contracted thought, running their little round of litigation or trading adventure, disqualify them from doing the work of statesmen—and it is the aid of statesmen that I invoke, in concerting railways for the benefit of Ireland. Engineers are to construct railways—solicitors have to perform the legal business belonging to their proper sphere—capitalists, with a view to profitable investment, supply resources for required outlay. All this is natural, necessary, and orderly; but if the servants are made masters—if lawyers, engineers, and mere monied men, are to be the originators of railways—you must reckon upon every variety of failure, for public principle will have no place in such utterly sordid schemes. Methinks I hear some bloated Stock Exchange jobber tauntingly ask, what has public principle to do with trafficking in shares? Nothing whatever, I readily respond; but, for that very reason, I would take care to exclude the whole race of share-traffickers from getting up railways, which should be wisely designed routes for permanent public accommodation—not paper highways and by-ways, to serve the purposes of dishonest dealers in scrip and time bargains.

If any of your readers should wish to verify my statements, he has only to linger half an hour at the portals of the Stock Exchange, and a scene will present itself which he never could adequately imagine. Grey-headed gamblers are chaired in one corner, beardless brokers stand chaffering around the potent pecuniary seniors; up goes the premium of one rascally railway, down falls the discount on some equally iniquitous scheme; lies of the most contrary description are vented with a hardihood and audacity which none but stock-jobbers have effrontery enough to perpetrate—and the staple of all these fraudulent transactions is, the public ways of a great monarchy! If Lord Dalhousie were to visit, *incog.*, the region of rapacity which I have faintly sketched, he would at once detect the source of all the mummery of deputations which crowd the ante-chambers of Whitehall. As all the machinery of the law is alleged to be for the purpose of putting twelve men in a jury box, so the whole interposition of the Board of Trade only operates to nourish brokers and jobbers in the Alley—not from any fault of Lord Dalhousie and his talented assistants, but from the faulty constitution of the Railway Department, which is powerless to do good, and simply because it has no primary function in proposing railway communication based upon public principles.

Now, this is the railway system that Ireland demands; and never was there a more favourable juncture for promoting her national interests. The Repeal agitation, that wildest of all popular movements, is rapidly, and I would add rationally, abating; not from the energy of frustrated Government prosecutions, which only served to show the error of attempting to rule a land by the instrumentality of technical lawyers—but through the palpable folly of the swaggering agitators themselves, who have sunk into a political *bathos*, in consequence of the laughable failure of their own confident predictions. A vague expectation of some portentous change might have long duped an excitable people, more prone to poetry than to severe reasoning; but when the great leader of Irish lawlessness (for, lawyer though he be, he is always in practical opposition to the laws) took upon him to determine the very day and hour of the Repeal of the Union—calculating, like an astrologer, the nativity of "Young Ireland"—the thing became so lucidly ludicrous, that "shame regained the post that sense betrayed," and the revived shrewdness of an intellectual people showed them the vanity of trusting in false political prophets. There may be a continuance of rabid ridiculous speeches in that parody on Parliament nick-named the Conciliation Hall—the shadow of the Repeal rent may linger after the substance has departed—but the choral cry for "Repeal!" cannot be revived again; nor will monster meetings again constitute (strange to say) the opprobrium and the honour of Ireland—for, while those vast unauthorised assemblages denoted a shameful disregard of the laws which interdict such gigantic gatherings, yet, the peaceable deportment of those masses (stimulated, too, by seditious speeches) was worthy of all praise, and, indeed, unprecedented in the annals of popular movements. Nor should I omit the ready submission of the Irish people to the Proclamation, which too tardily, as I thought, suppressed those public meetings, convened without legal sanction, and held under circumstances which excluded all idea of responsibility. The periodical meetings at the Conciliation Hall are unquestionably illegal; but so is every other meeting unconvened by lawful authority—and it would appear that Government have only the alternative of suppressing them all, or tolerating them all.

But, notwithstanding all the evils of perennial agitation, it is gratifying to feel assured, as I solemnly am, that Ireland is progressing in improvement beyond the utmost stretch of patriotic expectation. Six and twenty years had elapsed since I had an opportunity of inspecting her condition, and on recently revisiting the shores of my native land, I was powerfully impressed with the immense advance which she has made in national prosperity. I speak not of the street splendour of some fashionable parts of Dublin, which, in the style and completeness of their mansions, shops, and various establishments, are not a whit behind London. I marked the general features of amelioration, as evidenced by the increased intelligence, information, and industry, of all classes. The so-called temperance movement (a misnomer, by the way, for abstinence is *not* temperance) has contributed to clothe their bodies, and the spread of education has done much towards arraying their minds with useful knowledge; and here I would emphatically implore the Government to pursue with undeviating firmness their wise system of national instruction. Why should the Holy Scriptures be desecrated into an indispensable school book, in order to subserve the ultra-Protestant prejudices of clerical zealots? Why should tens of thousands of Roman Catholic children be penally shut out from primers, slates, and pencils (provided out of funds levied from tax payers of all creeds), because their parents or their priests do not wish that an usher's stool should be made a chair of theology? It is very remarkable, that at the time when the Pope is lecturing the Irish priesthood to abstain from molesting their Protestant rulers, the Protestant clergy of Ireland are anathematising the Government for not insisting upon compulsory Scriptural education—the Government which upholds their secular rights, and secures their ecclesiastical property—yea! the Government which supplied them with the means of subsistence out of the coffers of the State, when tithes were not recoverable by writs of rebellion or squadrons of dragoons, and to be a parson was to be a pauper!

As the lower classes have been intellectually elevated, the better orders have risen into proportional power of mind, so that the whole Irish community is steadily progressing. Ireland is essentially an agricultural country—she is prospering in that congenial field of labour, and her rural gentry are addicting themselves to the improvement of the soil, with a skilful zeal and gainful energy, which I was rejoiced to witness, and their example has had a surprising effect on the peasantry, who now adopt rotations of crops and modes of cultivation which thirty years ago would have been deemed heretical. The petty husbandmen are abundantly succoured by the richer proprietors; for, in the face of all misrepresentation, I boldly affirm, that, as a body, the calumniated landlords of Ireland are, perhaps, the best landlords under the sun. Why their error, construed into crime, is over indulgence towards their poverty-stricken tenantry, whom they permit to subdivide land amongst their descendants until a patch of potatoe ground becomes the *farm* of a whole family. What is a landlord to do if he has a heart of flesh in his bosom? Can he prohibit lawful marriage—can he prevent the blessing of multiplication and increase—can he drive ruthlessly from his estates the children whom God hath given to his already crowded dependants?—No, he acts not according to the maxims of Malthusian philosophers, but conformably to the dictates of a benevolent conscience; he refuses to rase the cottages of the poor strugglers around him—he suffers them to wring a scanty subsistence from infinitesimals of soil—and, though he is disabled from relieving their destitution, he cannot bring himself to incur their malediction. The result of this compound of generosity and improvidence is a state of things hardly to be paralleled in any country of Europe. The population becomes enlarged without a corresponding increase of land being taken into cultivation. Each generation adds numbers to the soil, until a special spot is covered with a coagulated mass of pauperism. There can be no augmenting demand for labour, because no new breadths of land are tilled and sown, and the price of labour on lands in meagre cultivation is continually kept down by the fierce competition for employment. The poor creatures consume their years in idleness, not from the want of energy, but from the want of work, and to remove them from their hovels is to drive them to deeds of desperation, for the estate on which they barely live forms the limit of their little world. This is a faithful picture of very many populous parts of Ireland, but there are huge districts capable of easy culture, situated in the western and southern regions of Ireland, which offer a ready relief for the redundant numbers starving and stagnating in other localities. And these districts might be opened up by the powerful agency of a wise system of railway communication. Lines radiating from the Irish metropolis to Sligo, Galway, Cork, and Waterford, would confer inestimable benefits on the Irish people, by rendering remote regions of the same land *popularly* pervious to each other's inhabitants. Roads are the great mechanical means of quickening the pulse of a nation's powers by promoting the interchange of her products, and the transit of her population. All roads must now give place to railroads, which are almost lightning conductors of the vast energies of civilisation. Give Royal railways to Ireland—railways which shall glow with third-class trains, conveying peasants to the distant plough, artisans to the remote workshop, fishermen to the long extended coast, teeming with every variety of the finny tribe, but where at present are neither boats, nor nets, nor fishermen. I am no planner of specific railways, but I plead for routes which shall be fixed according to luminous general principles—not scheming sections to secure the co-operation of a titled proprietor or a jobbing municipality. I would also observe, that the canals in Ireland should be preserved in their integrity, if even their own directors and shareholders were willing to sacrifice them for some present advantage; and the reason for their conservation is obvious—the existing canals are a part of the national arrangements for conveyance, and, as we may reckon upon railway lines which shall approach the direction of the canals, the latter will have their share of goods' traffic, whilst affording a salutary check to the possible monopoly of railroads—a consideration of great importance where companies bear sway. To dilate upon the commercial benefits flowing from a noble railway system would furnish a pregnant page. Look at the position of Galway, her capacious bay, forming a refuge from the buffets of the Atlantic. Imagine a railway running through the centre of Ireland direct to Galway from Dublin, and tell me if it be foolhardy to predict that North American liners would eject their thankful passengers upon the Galway terminus of such a railway, in order to hurry them in a few hours to the Irish metropolis? What is to prevent Galway from maturing into an Irish Liverpool, for what was Liverpool in the first year of George III.? Innumerable incentives might be urged, all conspiring to demonstrate to the Irish people the importance of sound Irish railways. But I must check my thoughts and my pen. As an impartial Irishman, I would ask Sir Robert Peel's Government to aid in enfranchising my bondaged countrymen from the whole tribe of noxious agitators, sham liberators, and truculent pacificators. I ask them to bestow upon Ireland the precious boon of a judicious railway system, which will develope her dormant resources, stimulate her inert population, multiply her points of commercial contact, and diffuse widely the external elements of order, peace, and prosperity. I have never flattered Sir Robert Peel—I have spoken freely and fearlessly of what I conceived to be his errors; but I honestly avow that he is doing his best for Ireland, and, therefore, he deserves the support of every calm judging Irishman. No patronage could purchase my pen—but I readily give to our rulers the meed of approbation which, I think, their conduct calls for.

Parliamentary Agency Offices, Cannon-row, Westminster, Feb. 17. THOMAS MULOCK.

ADVANTAGES OF RAILROADS TO IRELAND.

[FROM A CORRESPONDENT.]

As an instance of the incalculable benefits accruing to every country into which railway travelling has been introduced, we may mention the fact, that at the Drogheda Iron-works a locomotive-engine has been manufactured and completed, and put, in perfect working order, on the Dublin and Drogheda line. To no country in the world will the adoption of railroads entail such blessings as on Ireland—honest, industrious, and enterprising, the population have long looked in vain for some channel into which to direct their energies; hitherto, from various concurrent causes, their efforts have been discouraging, and thus diverted from legitimate employment, have been but too easily prostituted to the interested objects of others. Naturally of the rarest talent, and the nicest principle, the very best impulses of their hearts, which might have been moulded into virtues, have been made the panders to the designs of others. Now, however, we are sanguine in foreseeing happier prospects; the introduction of railway travelling, with all its necessary and contingent advantages, will open a wide and extended field for the industry of the Irish population. Apart from the vast advantages which the system will confer, by the development of her internal resources, the revival of her commerce, and the introduction of capital, the boon it will bestow upon the poor and hitherto unemployed labourer will far exceed all other benefits, imminent and unequivocal though they be. It will present them with a means whereby to obtain an honest and happy livelihood, and rescuing them from the present degraded—we had almost said barbarous—state of lawlessness and crime into which a vast portion are sunk, will raise them to that scale of national superiority to which their high and unrivalled original character, moral and intellectual, so justly entitles them.

NEW AMERICAN LOCOMOTIVE ENGINE AND CARRIAGE.

As the English engines, at first exclusively employed in America, were found unsuited to the country, and to be continually getting out of working order from various causes, in some measure from the nature of the roads, and from the short curves preventing the four-wheeled engines from moving round them without actually jumping at intervals, or the flanges of the front wheels riding on the rails, a locomotive was invented which should be more adapted for the peculiarities of the country, obviating, at the same time, the objections in the English engine. Mr. Baldwin (of Philadelphia) first succeeded in completing an engine fitted with cylinders on the outside of the smoke-box, which, with a few alterations, answered very well. But the chief improvement was suggested by Mr. Matthews, who applied the truck frame which is attached to locomotive-engines, and which, moving on a centre-pin, the wheels not being far apart, suits itself to every curve that may occur—thus enabling the engines to go round without difficulty or danger. This system Mr. Dunham (of New York) has since improved materially, and, on a late trial, his engine drew up an incline a load that was equivalent to 220 tons gross weight upon a level, at the rate of fourteen miles an hour, under a pressure of 50 lbs. The engine runs on six wheels: two of them constitute the driving wheels, the axle of which is hung behind the fire-box, under the driver's platform. The remaining four wheels, with two axles, are bound together in a frame, independent of the engine frame; the connection of the frame with the engine is principally effected by a central pivot fixed in the frame, passing through a bush in the bottom of the smoke-box, and secured on the upper side of the bush by a cutter driven through the pivot. The fore wheel, or truck frame, is likewise connected at the four corners by short links to the principal frame; by this means the former is well secured to the latter, while the mode of connection admits of lateral motion on the pivot within the necessary limits. The steam cylinders are hung on the outside of the smoke-box, and bolted also to the engine frame, their axis being so inclined as to point direct to the axis of the driving wheels. The extreme distance between the cylinders and the wheels admits of the greatest practicable length of connecting rods; the eccentrics, with their reverse motion gear, are placed under the engineer's platform, so as to be at all times accessible. The crank is connected with the nave of the wheel by letting it into a recess cast in the wheel for that purpose, and further strengthened by a wrought-iron strap shrunk upon the nave. This is advantageous, inasmuch as it leaves much room between the wheels, strengthens very considerably the cranked axle, and is, therefore, much less liable to accident than the ordinary method of interior cranks. In the casing of the fire-box, the stay bolts so generally employed in English locomotives for connecting the fire-box and casing, are dispensed with in Mr. Dunham's engine altogether. The following are the chief dimensions of the engine:—Diameter of cylinder, 10½ inches; length of stroke, 16; diameter of driving wheels, 54; of truck wheels, 32; of smoke box, and of the cylinder of the boiler, 37; length of cylinder of boiler, 72; number of flue tubes, 136; diameter of flue tubes, 1¾, and of chimney, 12 inches; the fire-box, 37 inches square by 48 inches high. With respect to their carriages, their comfort and safety is considered far superior to ours; their length is usually 30 feet, and capable of accommodating sixty persons; at each end there is a platform of 2 ft. 6 in. There is a separate carriage for ladies, fitted up with an adjoining dressing-room, which contains everything adapted to their comfort and convenience; if, however, ladies prefer, they can accompany the gentlemen. The under part of the carriage is composed of two distinct trucks, each on four wheels, and worked on central pivots, firmly fixed to the frame; the motion is thus rendered more equable, there being less tendency to lurch, by the support of the body being thus at the ends. On the whole, we think these improvements decidedly important to the country for which they are designed; whether, however, they would prove beneficial to our mode of travelling is a question not so readily solved. The subject is worthy the attention of practical engineers, as a valuable suggestion might, perhaps, be gathered from the ingenuity of our transatlantic neighbours.

Mining Correspondence.

ENGLISH MINES.

EAST WHEAL ROSE MINING COMPANY.

Feb. 17.—An account held on the mine of profit and loss for Nov. and Dec.:

Proceeds of lead ores sold Nov. and Dec., 1844	£13,784	5	3		
Cargall adventurers, for water charge	105	14	6		
Proportion of Cargall profits brought to this account	293	18	4	—13,183	18 1
November and December labour cost	£ 3,792	1	0		
Merchants' bills	1,512	0	9		
Lords' dues	920	4	4	—6,104	6 1

Showing a profit of 7079*l.* 12*s.*; to which add balance in hand last account, 1743*l.* 19*s.* 6*d.*—making a total of 8823*l.* 12*s.* 6*d.*; from which deduct 7680*l.* for a dividend of 60*l.* per 1-128th share, leaves a balance of 1143*l.* 12*s.* 6*d.*

WHEAL BREWER MINING COMPANY.

Feb. 4.—An account held on the mine of profit and loss for Nov. and Dec.:

Ore sold November and December, 1844	£1141	6	1		
Off dues	76	1	8	—1063	4 5
Expenses				£ 460	1 11

Showing a profit of 605*l.* 2*s.* 6*d.*; to which add balance in hand last account, 424*l.* 14*s.* 8*d.*—making a total of 1029*l.* 17*s.* 2*d.*; from which deduct 600*l.* for a dividend of 5*l.* per 1-120th share, leaves a balance in hand of 429*l.* 17*s.* 2*d.*

210 *tons since sold*—£1048 10*s.* 6*d.*

SOUTH WHEAL BASSET MINING COMPANY.

Feb. 11.—An account held on the mine of profit and loss for Nov. and Dec.:

Ore sold November and December, 1844	£3793	10	3		
Dues	252	18	0	—3540	12 3
Expenses				£3079	1 [illegible]

Showing a profit of 461*l.* 11*s.* 1*d.*; to which add balance in hand last account, 829*l.* 18*s.* 4*d.*—making a total of 1291*l.* 9*s.* 5*d.*; from which deduct 640*l.* for a dividend of 5*l.* per 1-128th share, leaves a balance of 651*l.* 9*s.* 5*d.*

A new and promising lode has just been cut in the seventy fathom level south; several other improvements have taken place, which will render this mine a profitable concern for a very long period.

* This includes more than 400*l.* paid in new works.

HOLMBUSH MINING COMPANY.

Feb. 17.—In the cross-cut south of the sump winze, at the 120 fathom level, the ground continues favourable for driving. In the 110 fathom level, west of Hitchins's shaft, the lode is one foot wide, producing good stones of ore; in the stopes in the back of this level, east and west of Michell's winze, the lode is fourteen inches wide, and worth 22*l.* per fathom; in the stopes west of Lobb's winze the lode is sixteen inches wide, and worth 30*l.* per fathom; in the stopes west of the sump winze the lode is fourteen inches wide, worth 12*l.* per fathom. In the 100 fathom level, west of Hitchins's shaft, the lode is much disordered by a cross-course; in the stopes in the back of this level, east of Forest's winze, the lode is one foot wide, and worth 15*l.* per fathom; in the stopes west of Hitchins's shaft the lode is fifteen inches wide, and worth 16*l.* per fathom; in the stopes west of the south cross-cut the lode is sixteen inches wide, and worth 24*l.* per fathom; in the ninety fathom level, west of Hitchins's shaft, nothing has been discovered in driving north, and we have again removed the men to drive west on the former lode or branch; in the winze sinking below this level the lode is one foot wide, and worth 12*l.* per fathom; in the stopes in the back of this level the lode is fourteen inches wide, and worth 18*l.* per fathom. The winze sunk below the eighty fathom level is communicated with the ninety, at which point the lode is small and poor; in the rise in the back of this level the lode is about six inches wide, producing good stones of ore. T. RICHARDS.

NORTH HOLMBUSH MINING COMPANY.

Feb. 17.—In the sixteen fathom level, driving east of cross-cut, on the course of the lode, there is no important alteration; the part now driving on is about four feet wide, composed of capel, mundic, killas, and spar. T. RICHARDS.

WHEAL MARY ANN MINING COMPANY.

Feb. 11.—Since my last report, we have driven on the caunter lode north 25 fms. 4 ft., and have had some good stones of ore; and the water is very strong, by which I think we are near a lode or branch. According to calculation, we have from six to eight fathoms further to drive to cut the next lode. We have driven on the east and west lode 11 fms. 3 ft., which has produced some good stones of ore. We have every prospect of cutting some promising lodes further north. M. RICHARDS.

BEDFORD UNITED MINING COMPANY.

Feb. 17.—At Wheal Marquis, the cross-cut at the seventy fathom level is progressing favourably. There has been no lode taken down in the fifty-eight fathom level east; in the rise in the back the lode is two and a half feet wide, and worth 15*l.* per fathom; at this level west the lode is two feet wide, composed of spar, mundic, and ore, producing good saving work. The lode in the forty-seven fathom level west is two feet wide, worth 9*l.* per fathom. There has been no lode taken down in Clemens's winze, sinking in the bottom, since last report. The lode in the deep adit level is two feet wide, composed of spar, mundic, and ore.—At Ding Dong, nothing has been done in Thomas's engine-shaft during the past week, the men having been engaged in fixing pitwork, &c. In the twelve fathom level east the lode is two feet wide, composed of spar and mundic, with good stones of ore.—At Wheal Tavistock, the lode in Phillips's engine-shaft is two feet wide, and without alteration. J. PHILLIPS.

COOK'S KITCHEN MINE.

Feb. 15.—We have driven the cross-cut south from the flat-rod shaft at the seventy fathom level four and a half fathoms, and, as the water is increasing in it, I expect the lode will be drained in the course of a week or two. The pitches in the bottom of the fifty and sixty continue very promising, and the ore raising there will materially assist our next sampling. Eudey's lode in the 121 east is at present unproductive. The part of Chapple's lode in the 170 east which we are carrying is four feet wide, and worth 10*l.* per fathom. We have holed the winze from the 160 to this level, and laid open a great extent of ground, which will set at a moderate tribute. In the cross-cut driving north at the ninety fathom level we have about three fathoms further to drive, but the ground is hard. Dunkin's lode in the 170 west is increased in size, but is yet uproductive. We have very favourable ground in the cross-cut north of the 140 fathom level. In the cross-cut south from Rogers's shaft, at the twenty-nine fathom level, we have not yet cut the lode. We are still sinking the Druid shaft, and have yet no water in it. Our prospects, on the whole, are looking more promising than for some time past. A. EUDEY.

TRELEIGH CONSOLS MINING COMPANY.

Feb. 15.—At Christoe, in the eighty fathom level, the sumpmen are preparing to sink below this level. Garden's shaft is suspended, in consequence of too much water; those shaftmen are preparing the tutworks in this shaft. In the seventy west of Good Fortune the lode is three feet wide, with a kindly appearance, and producing stones of ore; in the seventy east of ditto the lode is two feet wide, yielding stones of ore. In the sixty west of ditto the lode is two and a half feet wide, worth 12*l.* per fathom, and has a kindly appearance; the sixty rise, east of ditto, rising south of the lode, is in the country, the lode being very hard, and will be taken down afterwards. In the fifty west of Symons the lode is four feet wide, worth 10*l.* per fathom. In the forty-four west of ditto the lode is small and unproductive. In the thirty-four west of ditto the lode is two feet wide, with good stones of ore, rather kindly. In the twenty west of ditto the lode is twenty inches wide, with stones of ore. In the adit west of ditto the lode is fifteen inches wide, but little ore. I beg to say the engine-house will be completed and covered in, if the weather permit, on Monday next, when there will be no time lost in putting in the engine, and fixing the pitwork. W. SYMONS.

WEST WHEAL JEWEL MINING ASSOCIATION.

Feb. 17.—The ground in Buckingham's engine-shaft, sinking below the 10[illegible] is very hard. In the 100 east on Wheal Jewel the lode is worth 5*l.* per fathom—we have taken the men from here, and put them to rise against the winze sinking below the eighty-five; in the 100 west on ditto the lode is nine inches wide, containing stones of ore. In the eighty-five east on ditto the lode is still in disordered ground; in the winze sinking below this level the lode is worth 5*l.* per fathom. In the winze sinking below the seventy, east on ditto, the lode is worth 7*l.* per fathom; in the winze sinking below the same level, west cross-course, the lode is worth 20*l.* per fathom. In the eighty-five east on the south branch the lode is small and poor. In the forty-two east on Buckingham's the lode is worth 3*l.* per fathom. In the thirty east on Morcomb's the lode is three feet wide, composed of spar, mundic, and stones of ore. The lode in Wilkinson's engine-shaft, sinking below the fifteen, is three feet wide, promising for ore; in the fifteen east on ditto the lode is fifteen inches wide, but unproductive. S. LEAN. R. JOHNS.

CONSOLIDATED TRETOIL MINING COMPANY.

Feb. 17.—The lode in the sixty fathom level, west of Henwood's shaft, is six inches wide, producing a little ore—price for driving 7*l.* per fathom; ditto east of ditto, is one foot wide, and worth 4*l.* per fathom—price for driving 6*l.* per fathom; tribute, when set, 10*s.* in the 1*l.* The lode in the rise, in the back of the fifty fathom level, east of ditto, is twenty inches wide, and worth 8*l.* per fathom—price for rising 3*l.* per fathom. We have suspended the forty fathom level, east of ditto, until the rise in the back of the fifty be communicated with that level. We have sampled this day fifty-one tons of ore.

H. WILLIAMS. J. MORCOM.

HANSON MINING COMPANY.

Feb. 17.—In reporting this week, I beg to say the ground in the engine-shaft continues moderate for sinking—now below the forty-four about seven fathoms. The lode in the forty-four fathom level east is rather small, and yields but a small quantity of ore; the lode in the west end, same level, is poor, present divided by a horse of killas; both parts of the lode contain a great deal of mundic. The lode in the thirty-one east is nine inches wide, all saving work for copper ore; in the west end, same level, the lode is larger and more promising than for some time past. Garden's shaft is holed to the thirty-four fathom level; the men are now engaged cutting platt. At Treza we are opening quarry, and shall be ready shortly to commence rising stone for the engine-house. Z. WILLIAMS.

ST. AUSTELL CONSOLS MINING COMPANY.

Feb. 12.—We beg to inform you, that we have cut the Great Goffin lode, which is about nine feet wide, a part of which we are now driving west on about two feet wide, producing good stones of copper ore, the other part being disordered, and fully warrants our driving east and west on it, which we are now doing, and the ground is very kindly, and so good, that we are only paying 1*l.* 10s. per fathom in the eastern, and 2*l.* 5s. in the western end. On Williams's lode, driving east towards that part of the mine formerly called Wheal Hawkins, we have an improvement, and, although the lode is at present small, it is rich, and presents all the characteristics of a very promising copper lode; and we have commenced sinking a shaft to intersect this lode at the adit level, and have already sunk about ten fathoms in very good ground; and the ground is also very good on this lode, as we are only paying 30s. per fathom. In making this representation, we would not wish to raise the expectation of the shareholders to anything beyond an improvement, which we consider should be known to them in common with ourselves. Our operations in the other parts of the mine are, we are happy to say, going on and progressing very satisfactorily.

J. Sampson. N. Tredinnick.

TINCROFT MINING COMPANY.

Feb. 17.—Since my last report, we have cut the lode to the west of the cross-course, at the eighty fathom level; it is about three feet wide, producing rich grey and yellow copper ores, worth 20*l.* per fathom; we expect it will improve as we drive, as was the case in the level above. The lode under the eighty fathom level, by underlaying less than it did above, we are now leaving it standing to the south of the shaft; we have cut a small branch, containing good quality ore, in the cross-cut going south from the eighty east, on cross-course—we expect to see the lode in the course of this week; we have commenced sinking a winze to the east of the cross-course last alluded to, where we find the lode two feet wide, worth full 20*l.* per fathom. The lode in the seventy east is two and a half feet wide, worth 7*l.* per fathom for tin and copper ore; the lode in the seventy west is twelve inches wide, worth 10*l.* per fm. —here we have just passed through a small cross-course, which has thrown the lode out of its course a little. The lode in the sixty east is two and a half feet wide, worth 12*l.* per fathom; the sixty west is worth 6*l.* per fathom—this end has improved in the past week. The fifty east, which has been suspended for some time, now Willoughby's shaft is holed to that level, we shall resume again —the end is worth 6*l.* per fathom for tin; the lode in the fifty west is twenty inches wide, producing some good ore and promising. The rise in the back of the forty west, against a winze from the thirty, is producing good stones of ore. Our pitches in this part of the mine continue to yield good quality ores, men making fair wages. At Palmer's, on East Pool lode, we continue to look cheerful. On the whole, I am glad to say that our mine is much improved since my last report.

W. Paul.

TAMAR SILVER-LEAD MINING COMPANY.

Feb. 17.—We have cleared up the engine-shaft down to the 145 fathom level, and the sumpmen are now engaged clearing the level.

The lode in the 135 fathom level is two feet wide, capel and ore, saving work.
Ditto 125 ditto—eighteen inches wide, carrying two good branches of ore.
Ditto 115 ditto—twenty inches wide, can and ore, coarse in quality.
Ditto 105 ditto—one foot wide, killas and ore.
Ditto 95 ditto—nine inches wide, good work.
Ditto 85 ditto—one foot wide, producing some ore.
Ditto 75 ditto—eighteen inches wide, unproductive.
Ditto 65 ditto—twenty inches wide, can and ore, very promising work.
Ditto 55 ditto—six inches wide, some good stones of ore.
Ditto 45 ditto—is in slidy ground, and unproductive.

The incline plane shaft is twelve fathoms below the seventy-five fathom level on the incline. Our pitches continue to look well.

North Tamar.—The engine-shaft is sunk 9 fms. 3 ft. below the 50 fathom level; the ground is a little more favourable for sinking.

The lode in the 50 fathom level north is six inches wide, unproductive.
Ditto 40 ditto ditto—eighteen inches wide, six inches saving work.
Ditto 30 ditto ditto—twenty inches wide, mundic and capel, with some ore.

Wheal Hancock.—The engine-shaft is down to the thirty-seven fathom level; we have again commenced sinking, intending to sink twenty fathoms before we cross-cut. In the cross-cut, at the twenty-seven fathom level, the ground is still very hard, and discharging a large quantity of water.

J. Sprague.

CORNUBIAN MINING COMPANY.

Feb. 17.—On Wednesday last an accident occurred to our small house water plunger lift, supplying Murray's engine, which rendering her almost immediately idle, has caused the water to be in the eighty-six and seventy-eight fathom levels up to Saturday last, so that, we regret to say, little has been done since my last report in these parts of the mine; this mishap is now overcome, and will be effectually set to right by our engineer in a few days; the mine is also drained to the bottom, and every thing is in full course of working, without any anticipation of further hindrance on this score. The pitches at the seventy-eight fathom level, back and bottom, are yielding fair quantities of work—their prospects are much as usual. At Ventongimps the adit end men are clearing a run and securing the said level. The last winze sunk, nine feet deep and five feet long, in the bottom of the eighteen fathom level, in another part of the bunch of lead, produced 2 tons 14 cwt. of rich ore R. Rowe.

LEWIS MINING COMPANY.

Feb. 15.—In Lewis engine-shaft, the lode at the thirty-two fathom level appears to be disordered, as it is between two cross-courses, about three fathoms apart, but with some good spots of ore. We have now got through the eastern cross-course, and shall immediately proceed to get our sump whim shaft down at the thirty-two fathom level, whereby we shall have a cheaper discharge for the stuff, and a good ventilation. The lode in the twenty east is small and unproductive; this level we continue to drive, in order to get forth to the intersection of our north lode, where we hope it will be more productive. The lode in the twenty west is sixteen inches wide, with some good stones of ore, and very promising; this end is near being under some old workings in the level above, where the lode is large and very promising.—At Wheal Nutt, we have secured the sump shaft to the bottom, or twenty fathom level, and are preparing to sink under the twenty fathom level, in order to get under the old men's workings on the middle lode. The south lode at the twenty fathom level is one foot wide, producing some good work for tin; we have also cleared a cross-cut north, from the east end of the south lode into the middle lode, where we find the bottom worked away, and the old men's wood lifts in it; this lode appears to be worked away from the twenty to surface; we also cleared the cross-cut into north lode, a very promising lode, two and a half feet wide, with some good quality ore in it—here we have commenced driving east, to get under the copper ore shaft. We are driving east on north lode at the ten fathom level, where we have some good stones of tin, and also sinking copper ore shaft under the ten fathom level, where we have a very promising lode, three and a half feet wide, with occasional stones of copper ore. The lode in the ten fathom level, west of sump whim shaft, is eighteen inches wide, with good stones of ore.

S. S. Noell. P. Eddy.

CALLINGTON MINING COMPANY.

Feb. 17.—Johnson's engine-shaft being sunk to an 100 fathom level, we are now about to commence cutting a platt. In the ninety fathom level the lode has not been taken down since last report. In the eighty fathom level driving north, the lode is worth 18*l.* per fathom; in the south end we are opening tribute ground—the same remark may be made of the sixty fathom level driving north. Johnson's lode, in the fifty fathom level, is two feet big, with spots of copper ore. At the north mine, in the eighty fathom level driving south, the lode continues much the same as last week—worth 7*l.* per fathom. The seventy fathom level driving south has been suspended for the present, having put the men to drive west on the contra lode, which is three feet big, producing stones of copper ore, with black jack and sugary spar. In the end driving east it is much the same size, with a small regular branch of copper ore. In the fifty fathom level we are driving through tribute ground. In the forty fathom level the lode is producing silver-lead ores.

J. T. Phillips.

UNITED HILLS MINING COMPANY.

Feb. 14.—In the eighty fathom level, east of Williams's shaft, the lode is six feet wide, three feet on the north part ore of fair quality, and worth 15*l.* per fathom; in the eighty fathom level, west of ditto, the lode is three and a half feet wide, producing but little ore, worth 5*l.* per fathom. In the seventy fathom level, east of eastern shaft, the lode is three feet wide, eighteen inches good ore, worth 25*l.* per fathom; in the seventy fathom level, west of diagonal shaft, the lode is four feet wide, producing ore throughout, worth 8*l.* per fathom. In the sixty fathom level, east of eastern shaft, the lode is four feet wide, two feet good ore, worth 30*l.* per fathom; in the sixty fathom level, west of James's shaft, the lode is three feet wide, eighteen inches on the north part ore of average quality, worth 15*l.* per fathom; stoping in the bottom of the sixty fathom level east the lode is four and a half feet wide, three feet good ore, worth 45*l.* per fathom; stoping in the bottom of ditto the lode is three and a half feet wide, two and a half feet good ore, worth 40*l.* per fathom. In the cross-cut south, at the fifty fathom level, the ground continues to improve for driving. In the thirty fathom level, east of eastern shaft, the lode is two feet wide, six inches on the north part producing ore, worth 3*l.* per fathom. In the ten fathom level, east of ditto, the lode is one foot wide, and unproductive for ore. In the winze under the fifty fathom level east the lode is three and a half feet wide, two feet on the north part good ore, worth 26*l.* per fathom. At Wheal Sparrow, in the fifty fathom level, east of Gibson's shaft, the lode is three and a half feet wide, producing but a small quantity of ore, worth 3*l.* per fathom. In the fifty fathom level, west of ditto, the lode is two feet wide, poor at present. In the forty fathom level, east of ditto, the lode is two feet wide, with a kindly appearance, producing but a very little ore; in the winze east below ditto the lode is eighteen inches wide, six inches good ore, worth 4*l.* per fathom. In the thirty fathom level, east of Richards's shaft, the lode is four feet wide, one foot on the south part ore of fair quality, worth 5*l.* per fathom.

T. Trevenen. R. Williams, Jun.

Valuable Discovery.—A rich new copper mine has been recently discovered on the Standbury Estate, Morwinstow, which is now working, with every prospect of success, under the management of Captain J. Phillips.

FOREIGN MINES.

ALTEN MINING ASSOCIATION.

Annual Mining Report at the close of the year 1843.

As the monthly reports regularly transmitted the board during the past year will have enabled you to follow the progress made in this department of your establishment for that period, it will, in the present instance, be superfluous to enter further into detail than may be called for, in alluding to the result of last year's operations, and in describing the appearances, prospects, and capabilities of the several lodes, with the most advantageous manner of conducting the future proceedings for more fully developing them.

Raipas.—Notwithstanding the fluctuations that have occasionally taken place in the workings on the different lodes at this mine, the copper productions for the year has exceeded that of 1843 by upwards of fourteen tons, which, in a great measure, may be attributed to the discovery of the continuation of a branch of the old No. 11 bed, to the north-west of the ten fathom level, and the large compact and productive lode in No. 1. The success hitherto attending the cross-cuts and other exploratory works in the vicinity of the original lode, pointed out the propriety of exploring some of the virgin ground to the north-west of the present workings; and in a cross-cut driven for this purpose from the adit, two distinct lodes were intersected, each running in a westerly direction, and obliquely to the other, and nearly parallel with the original workings; they are composed principally of a friable gossan, consisting of oxides of iron, a little oxide of manganese, and the carbonates of iron, lime, and magnesia, disseminated throughout a soft clayey substance, containing small veins, and patches of extremely rich black oxides and sulphurets of copper, as well as impregnated with a complete net work of blue and green carbonates of the same metals. These lodes, as far as yet explored, vary from two, to three and a half, and four feet broad; they cross the strata of metalliferous limestone, and at the present depth are unsettled in a deeper cross-cut, which is now driving from the ten fathom level; we hope to find them more compact and regular. If our expectations be realised, there is no doubt that the ore will be found more collected, and in greater quantity, and being in an almost unexpected part of this district, may be looked on as a great acquisition to the mineral properties already in your possession. With the exception of the years 1838 and 1839, when the immense deposit of rich purple ores in No. 11 was worked on to its full extent, I can safely state that the general appearance of this mine has scarcely ever been more flattering than at present, and the discovery of the new lodes adds considerably to the extent of metalliferous ground, which at a future day when properly explored and laid open by the usual mining operations, may, from the present favourable indications, be expected to yield no inconsiderable quantity of ore. The original workings still continue good, and from the size, regularity, and extent of lode, explored in No. 1, we are at present justified in entertaining the most sanguine hopes of its continuance, as well as to expect from the direction and dip of a small pipe vein of yellow and purple ores worked on about three years ago, in a winze under the ten fathom level west, that these two veins will ultimately intersect each other, and, if so, we may look for still more favourable results. The recent discovery of the bed of rich copper slate, alluded to in my October report, appears also to dip towards the twenty fathom level somewhat southerly, and if, as we suppose on further trial, it should be found a continuation of the original bed of slate removed in this direction by the jaspery slate in the twenty, so frequently alluded to in former reports, it will not be of less importance to this branch of the concern, than the discoveries before described. From the foregoing remarks on the appearances of the lodes at this mine, it will readily be perceived that the future prospects are equal, if not more flattering, than for many years past, and no apprehension need be entertained of a discrepancy in the returns of copper for the ensuing year. The recent discoveries offer greater capabilities for an extension of the workings in every direction than at any former period; but these cannot, until properly laid open, materially increase the returns of ores, although every fathom of lode explored may be considered as adding to our orey ground, and making reserves to fall back on at some future time. The greater part of the gossan lodes, although at present of inferior quality to the original lode, will still pay for excavating, and the samples of ore produced from them have yielded, by assay, from 3 to 5 per cent. of copper, whilst the cost of stoping the same ground, under favourable circumstances, average only from $3 to $5 per fathom. The necessary workings for properly developing all the lodes, would be more than we, under present circumstances, could conveniently undertake; such portion only will be commenced as may be deemed most essential to the future prosecution of the mine in the most economical, and, at the same time, advantageous manner, whilst the remainder will be deferred to a more convenient period, when the extra expense of exploring the country will not fall so heavily on your establishment. I shall, however, point out such workings as are considered necessary for attaining the object we have in view, but, at the same time, confine our operations to those only which are at present deemed most important, for exploring the lodes, laying open reserves, and expediting the prosecution of the several workings. The principal mining operations are now confined to the westernmost part of the mine, where the ore occurs in greatest quantity, and in which direction of the lode appears to dip. The adit level is the only horizontal working that has been prosecuted to the westward of shaft No. 1; next to this is the ten fathom level, where about four years ago, in intersecting a small cross vein, it was divided, one part turning northerly, and the other southerly; the latter, after having been driven about twelve fathoms, intersected a portion of the orey deposit in No. 1, in which stopes and other workings were afterwards commenced, and have been continued to the present time; the northern level at the distance of about five fathoms from the point of separation intersected one of the north-west lodes, and after being communicated with a winze from the adit, was suspended for a time, for the want of hands to prosecute more necessary works in other parts of the mine. It is only within the last two months that this place has been resumed, and its continuation may be considered as among one of the most necessary workings for exploring the lodes in the virgin ground towards the north-west, and at a deeper level than any of the present workings in that direction. The ten fathom level westerly should next be resumed for the purpose of intersecting the deposit of ore under No. 1, as well as for unwatering and ventilating the workings in this part of the mine, and for exploring that portion of the lode remaining between shaft No. 1 and the present ten fathom level end. The twenty fathom level westerly should be driven towards the pipe vein, under the ten fathom level, and further, in the same direction, under the junction of this vein with No. 1, be discovered. The bed of copper slate dipping by the twenty fathom level can, for the first, be followed with a stope and, afterwards, such workings as may be found necessary, may be adopted for further exploration. The true effect of the stratum of jaspery slate on the lode under the twenty fathom level should be determined by levels or sinks, as may, in the course of working, be found most advisable and convenient; the lode to the eastward, under the large gossan deposit, should be further explored, and the easternmost workings extended towards the northeast for the purpose of intersecting and determining the value of the numerous small veins of rich ore found at the surface, intersecting the country in that part of the sett, and hitherto in an almost unexplored portion of the works.

United Mines.—The most important and only exploratory working at these mines during the past year has been the shaft under the eighty fathom level, the lode in which has, on the whole, been more regular than is usually the case in this part. In the course of sinking, a lode was first cut in December, 1843, which was subsequently found to be either one of the veins between Ward's and Woodfall's, or a branch struck off from the latter lode, a little below the thirty-five fathom level. The lode on which we are now working was cut in the bottom of the shaft in March, and is supposed to be a continuation of either Ward's or Petherick's; it runs in the same direction, but dips nearly at right angles with Woodfall's; the angle of dip corresponds almost with that of Ward's (from 10 to 15 deg. northerly), whilst the materials of the ore ore, as well as the ore itself, more narrowly resembles Woodfalls. A gradual improvement has been taking place in this part of the mine for the last two months, but in consequence of the heavy water and other charges attending this working, it cannot at present pay the costs; being, however, of vital importance to this branch of the establishment, its further prosecution in the manner hereafter explained will be essentially necessary. At the end of the year, it was found advisable to alter the method before adopted, of stoping away the large extent of lode under the eight fathom level, and for better securing the ground, and laying open the orey part of the lode. Two levels were set, the one easterly, and the other westerly, each on the course of the lode, which in this place averages from three to four fathoms in width. These levels have passed about ten fathoms in each direction, through a coarse but orey lode, and one which will ultimately pay the cost of stoping, as well as enable us to increase our supplies of fluxible ores to the smelting-house. The stopes have been mostly worked on a large coarse part of the lode, consequently the ore has been of a lower per centage than usual, and that occasionally supplied as a flux unusually so. The best ore was formerly produced from the north lode in the eighty, but, in consequence of the heavy and extensive falls of ground, these workings were suspended, and our limited means have not enabled us to recover them by a cross-cut further to the westward from the eighty; as, however, this impediment is, in a great measure, removed, I hope ere long to be enabled to regain the orey ground remaining in this part of the mine. Ward's and Petherick's lodes have not been prosecuted for some years past until within the last two months, when a stope was set on the former, and appears to be fairly paying its way. The returns of copper for the past year have decreased in a proportion equal to the diminution of the number of tutwork bargains, and agreeing with the estimated produce as nearly as possible, with ores of such fluctuating per centage of metal, requires no further comment. The levels on the lode, under the eighty fathom level, have been opening ground equal, if not on the whole superior, to any explored at this mine for several years, and an extent of nearly 500 cubic fathoms of lode, exclusive of pillars and supports, has, in the last three months, been brought into a state capable of advantageously increasing our monthly returns. As nothing has been done at Ward's and Petherick's for some years, I can only refer you to the report forwarded from Drontheim last May, in which the capabilities of these mines are fully pointed out. In the ensuing year it will be advisable to prosecute the exploratory workings under the eighty fathom level, and, at the same time, open as great an extent of lode as possible with levels and winzes, for the advantages subsequently gained by the stopes. To carry on these workings in the most advantageous manner, it will be necessary to sink a perpendicular shaft under the eighty, to intersect the lode at the depth of the present deposit workings, when the water and stuff may be cleared in less time, and at one-half the present cost; and the beneficial influence of having a fresh current of air circulating through the mine, and which in this part is now produced at some expense with an air machine, will also be felt in a twofold degree, by enabling the men to attend a longer time to their work, without the risk of destroying their health in a deleterious atmosphere, and ultimately becoming a burden to the works; and, at the same time, it will thereby effect a reduction in the price of labour for excavating the ground, and, consequently, where under the present system a good course of ore would scarcely pay the expense, when the proposed undertaking is completed a comparatively poor and coarse lode might be advantageously worked. A communication should be made with the north lode from the eighty west; this may be effected by two methods, either with a rise from the present adit level north, or with a cross-cut from one of the western stopes, neither of which is estimated to exceed five or six fathoms, and, being in favourable ground, could be completed at a comparatively trifling cost; the ore remaining in this part would thereby be made available, and the lode at the same time be more effectually explored.

Ryper's.—At the commencement of the year the appearance of the several lodes at this mine held out prospects of returning more than the average quantity of ore, and the reports for the first four months tend to show that even our most sanguine expectations would have been realised, had the lodes continued productive throughout; but a slight falling off in the subsequent months, together with the disadvantages experienced by an influx of water in the spring, and other important circumstances alluded to in the monthly reports, have caused a trifling disappointment; the estimates are, however, only about four-fifths of a ton of copper less than the actual returns, and the latter about two and three-fifths tons less than you were led to expect from hence by the last annual report; even this difference may, in a great measure, be attributed to the irregularity in the workings duriug the three summer months, when the tutwork bargains were occasionally suspended at different periods, for the purpose of procuring men to unload and ballast the vessels. In driving the adit level some good patches of ore were met with in the country, but not accompanying any lode, proving that the rock itself is more or less metalliferous; and in such places, wherever intersected by a lode, good bunches of ore have invariably been found. The adit level was holed at the close of the year with the deepest workings, and will perfectly unwater and ventilate the mine, as well as prove an easy egress through which to clear the deeper workings. After the communication of the adit, a level was immediately commenced at the same depth for the purpose of exploring the lode, and running in the direction of another lode about eight or ten fathoms distant; it is to be hoped that this will also be intersected in the course of a few months, when some of the old workings stopped about twelve months ago, on account of the water continually flowing into them, may be resumed, and from former results a profitable part of the mine may be expected to be regained. Two new lodes have also been discovered here during the past year—one in July, a little to the northward of the adit, and the other in the latter part of September, on the west side the valley, and about ten fathoms east of the original workings; although these of themselves, being small, do not hold out the most favourable prospects, yet as such contain good dredgy ores, and, from their direction and dip, may be expected to intersect several of the other lodes, they may be looked on as an acquisition to the mineral properties at this place. There are now no less than ten distinct lodes of various sizes contained in that part of your establishment alone, which constitute this mine; they are all situated at short distances from each other, each tending more or less towards the other, and ultimately the different points of intersection must be met with. The majority of these lodes are small, varying at the surface from six to eighteen inches, but all contain ore in greater or less proportions; several have been found to increase in depth, both in size and quality, and at their intersection bunches of ores of various dimensions have almost invariably been found. These circumstances, in connexion with the general favourable appearances of the present workings, are grounds sufficient to point out the permanency of this mine, and will, probably, be set beyond doubt, when the several lodes are sufficiently explored and developed, which hitherto the urgent necessity of producing ore has prevented from being done so effectually as could be desired. Should the several workings continue so favourable, as from present prospects we have every reason to conclude, I do not apprehend any discrepancy in the returns of copper from hence for the ensuing year, and if, on the intersection of the other lodes with the adit level, our expectations be realised, they would rather be augmented than decreased. No additional exploratory workings will at present be required, and not until the two lodes before-mentioned are intersected by the adit level will it be necessary to increase the tutworks; after this object has been attained, it will, perhaps, be found advisable to commence driving levels at the same depth, on the course of the lodes, but these can only be determined on after the lodes are cut.

Mancur's.—The prosecution of the workings at this mine was suspended about three or four years ago, when a reduction of the establishment was determined on. The adit level had then been driven some considerable distance into the mountain, and the lode, after having been removed by a cross-course, was found, but both poor and unpromising; on a more recent inspection of this place, it was thought advisable to resume the workings, and, accordingly, the adit level was set to drive westerly about two months ago; during the first month the lode continued very poor, and scarcely a spot of ore being visible, until a communication was formed with Daw's shaft, when a few specks began to appear; these have continued increasing, and the level is now yielding a fair quality of dredging ore; up to the present time betwixt four and five tons of 4 to 5 per cent. ores have been produced. A little further westerly a large bed o. gossan is found at the surface; and upon the gradual improvement in the lode, on approaching the gossan we may reasonably expect ere long to meet with at least sufficient ore to remunerate you for all the outlay of capital that has taken place at this mine. At present the adit level westerly is the only bargain that can be advantageously carried on, but in the course of a month or two, should the weather prove settled, we may set a stope on the gossan, which will, in some measure, contribute towards the supply of fluxible ores for the smelting-hoese.

Mitchell's.—As no important workings have been carried on at this mine for the last four years, and the character of these lodes from former reports being so well known to you, it will be unnecessary for me to enlarge further on this subject, and shall, therefore, confine myself to their apparent capabilities, with the best method of effectually exploring them, and the results that may be expected from such an undertaking. The several rich deposits of ore found at this mine have been more extensive, as well as more valuable, than any other discovery made on the works, with the exception of Raipas; and the number, extent, and regularity of the lodes, combined with their direction and unusually promising character, would warrant almost any outlay that might be incurred in fully exploring and developing them. In addition to the two principal lodes, which, on more than one occasion, and particularly before the discovery of Raipas, have proved the mainstay of your establishment; there are numerous veins and branches found intersecting each other, and having almost precisely the same appearances as those at Raipas. The direction and general character of these lodes correspond so nearly with those at Raipas and Mancur's to the eastward, and at Wilson's and the Inner Stream to the westward, that any miner without hesitation, and more particularly after tracing the run of the greenstone and different strata of clay slate and limestone series, would pronounce the whole of this range of mines to be founded on a continuation of the same lodes, which may be now traced a distance of about two English miles. Towards the east of the junction of Nellan's with the south lode, an extremely rich deposit of yellow ore was found, which became less at it receded from the point of intersection; these lodes afterwards appear to accompany each other, and have been uncovered on the backs for nearly fifty fathoms in length; in every instance they have been found to contain more or less rich ore, with here and there a small quantity of gossan, containing copper, often to the amount of 6 or 7 per cent. Scarcely any of the deeper levels have been driven so far as the junction, and, in most instances, when the ore has been worked out, their further prosecution has been suspended. The discovery of the rich deposits alluded to, may, therefore, be attributed rather to good luck than to any of the chances attending a regular system of mining. Towards the easternmost extremity of the workings, a small bunch of ore was followed in one of the surface stopes, until getting below the level of the river, when its further investigation was prevented by the great quantity of water found percolating through the crevices of the rocks. For the purpose of cutting off this water, as well as for the greater conveniency of excavating the lode, a shallow level was commenced from an open lobby, near the junctions of Nellan's and the south lodes; this level was calculated to reach the eastern stope about five fathoms below the present bottoms; it is driven easterly about fifteen fathoms, on a large regular lode, containing only a few spots and bunches of ore, some of which are expected to pay for stoping; a distance of about four fathoms still remains to reach shaft No 4, and a further distance of about three or four fathoms to come under the orey ground in the stope; and as appearances around this shaft hold out prospects of intersecting orey ground, and making stopes, I consider this level of importance, and one that should be resumed and prosecuted easterly, for the purpose of fully exploring the lode near the surface, prior to undertaking any deeper working. Nellan's lode, towards the west, diverges considerably to the southward of the others, but the north and south lodes are parallel, or nearly so, and being only from two to four fathoms apart they not unfrequently fall together, and, in such instances, the largest and richest deposits of ore have been met with. In both these lodes the bunches of ore have been found to run parallel, and a north and south line drawn through the one would invariably intersect the ore in the other, so that wherever where one lode was found to contain ore, little or no difficulty has been experienced in finding it in the other also; and whenever they are doubled each other, or joined a deposit of ore, varying from 3 to 4 and even 5 fms. wide, has been found. Such a circumstance was verified to its greatest extent in the west lobby.

some years ago, where a course of solid yellow ore, of 15 to 18 per cent., was worked in for about twenty-five fathoms long, varying from two to five fathoms wide. On the west side of the lobby, the lodes were again separated by a horse of greenstone, about nine feet wide. They both contained a small quantity of ore, but not paying the cost of working were stopped, after driving only a few fathoms. From the rich deposit, several lodes and branches are visible in this direction at the surface, all containing more or less gossan or ore, but none have been explored; and the value of the piece of virgin ground between this part of the mine and Wilson's—a distance of about one-third part of an English mile—remains to be proved. The necessity of a level in this direction is therefore evident, and more particularly so as the near approximation of the lodes to each other will render it possible to explore them with cross cuts, at stated distances, with a comparatively trifling extra expense. Nellan's lode has scarcely been touched to the westward of the shallow adit level, where it is to be seen about six inches wide, containing good and regular squats of ore. The ground is hard and expensive for working, but we have not, therefore, the less reason to expect the same success here as further to the eastward, where, in 1836, the level was resumed on a part of the lode on very unfavourable ground; the lode itself was compressed to less than a ½ inch in width; but, on driving about five fathoms without the least sign of ore, we came suddenly on one of the cross veins or droppers from the fourth lode, about six inches wide, which joined the lode at an oblique angle, and immediately expanded it to the breadth of six feet solid prills. A sink has been worked on Nellan's lode, to the depth of about ten or eleven fathoms below the level where the schistose stratum was met with, and all further trials immediately put an end to. In the east side of the stope, under the same level, there remains to the present day a small bunch of ore, about eight inches wide, but which, on account of the water, will not meet the cost. Another shaft, called Mitchell's shaft, was sunk, about twelve or fourteen years ago, to the depth of about ten fathoms on the south lode; and from the level of the shallow adit, at the bottom of the shaft, a level has been driven westerly, about twelve or fourteen fathoms, on an orey and very promising lode, but which, on account of the water and other heavy charges, was also stopped. A cross-cut has been driven from the same place, about seven fathoms northerly, to cut the north lode. A branch, containing good ore, and about eight or ten inches wide, was discovered, but, for the same reasons, no workings were undertaken to prove whether it was the north lode or not. These workings are now full of water, as are also all the others, where deeper than the shallow adit level. The deep adit level at this mine is perhaps one of the best contemplated works, and was certainly the most regularly conducted operation of importance on the establishment, as well as that where the greatest perseverance has been shown in exploring the country, where scarcely a ton of ore has been produced or where a lode intersected since its commencement. It is driven upwards of ninety fathoms, in a straight line through the country; and had Mitchell's lodes been found penetrating the slate, or been intersected by this level, the existence of your establishment, for a long series of years, would have been placed beyond a doubt.

As it now is, and with such comparatively trifling and partial trials as have been applied to these lodes, I still entertain doubts whether this adit is prosecuted far enough, and trials should be made on the course of the lode westerly, for determining their true dip, and run in direction of the adit; it is also a matter of serious consideration, whether after the great outlay already incurred in driving this level so far, it should not be continued through the slate, and into the greenstone on the northern side, where we might still have a chance of not only discovering Mitchell's lodes, but also of meeting others, the backs of which are not to be found at the surface; the great depth (about forty fathoms) at which this level would intersect the lode, speaks also in its favour, and it at last resolves itself into the question whether the time and outlay of capital required to complete such an undertaking, would, under present circumstances, be convenient? The importance of such an undertaking is beyond question, and if not at present, should, certainly, at some future time be resumed, but it would be useless to do so on a less calculation than an outlay of $1500 to $2000 Spanish, and a period of full three years for completing it.

Wilson's.—The lodes at this mine are among some of the earliest discoveries on the establishment, but appearing small and even unimportant at the surface, were lying dormant until within the last three years, when the peculiar circumstances under which we were then placed, called our every energy into action. At this mine we have one of the most convincing proofs of the errors of hastily abandoning any undertaking without a full and efficient trial. Several small lodes, the largest of which did not appear a foot in breadth, were visible at the surface; and the Cornish miners employed on the works, about twelve or fourteen years ago, must have been impressed with an idea of their importance when they commenced an adit level at the foot of the hill in which the lodes are situated. This adit, formerly called Carl Joahn's, after passing through two small lodes at its commencement, was driven about six fathoms, and no other lode having been found, its further prosecution at that time was suspended. Had it been continued but a single fathom further, a course of solid yellow ore, of four fathoms in width, would have been met with. This course of ore was subsequently found to have been formed by the junction of three or more lodes; and the brilliant returns from hence since 1841 have proved the value and importance of the discovery. Here, however, as in several other places, the workings were suspended when the large deposit of ore was expended. But this, in the present instance, must be attributed rather to the chance of circumstances, than a desire to abandon the operations, for reports invariably recommend a trial in depth. Several methods have been devised, and partial experiments made, to endeavour to cut off the water, but hitherto without effect. There are now two lodes at the entrance of the level, running almost parallel, and both underlaying northerly, but at different angles, and tending towards each other; whilst the junction of the lodes in which the rich deposit was found, at the distance of about six fathoms further north, have a southerly underlay. Calculating, therefore, from the different angles of depression, the junction of the five lodes may be expected at the perpendicular depth of about ten to twelve fathoms. Under the idea that this point could be reached with less difficulty than had before been experienced in workings of a similar kind, we were induced, about two months ago, to commence a perpendicular shaft through the country, in the hope of being able to reach the junction, without meeting a repetition of the annoyance from the influx of water; but in this we are disappointed, for at the depth of about six feet below the bottom of the adit we intersected a vein of solid ore, about four to six inches wide, running transversely to the lodes, and through which the water percolated to such a degree as to render its prosecution both difficult and expensive; and I fear the severity of the winter, and the great quantity of ice continually collecting around the brace of the shaft, will soon compel us to stop, until some more eligible method of resuming it can be devised. In the meantime, I have made a trigonometrical survey of the adjacent country, and find that an adit level can be brought in at the depth of about eleven fathoms below the present adit, and as the water does not appear to increase in depth, or follow us down, but continually percolates through some crevices about ten feet below the brace (to which height it also invariably rises when the shaft is stopped for a few hours), we are in hopes that the depth of the proposed adits will be sufficient to effectually drain the whole of the mine. The length of the adit is estimated to be about 100 fathoms, the first twenty-five or thirty fathoms of which will probably pass through an alluvial soil, and, consequently, entail but a trifling outlay; the next fifty or sixty fathoms will intersect a schistose stratum, and cannot be expensive for excavating, whilst the remainder of the distance will be in greenstone. If two adit shafts be sunk at certain distances from each other, and levels be commenced from each, at the same depth, and, at the same time, without any unforeseen impediment, this undertaking may be completed in about twelve or fifteen months, at an expense of about $2000—an outlay which, under present circumstances, and from the appearance of the several lodes, would be perfectly justifiable, and is to be strenuously recommended to your consideration. In addition to Wilson's, this adit would intersect two small lodes further south, and, probably, others which may be covered by the alluvium, and at present not discovered at the surface. In Wilson's district several other lodes have been found, and alluded to in former reports, under the names of the ravine, new south lodes, &c., and another of more recent date was discovered in the early part of October, which yielded, on uncovering the back, a few tons of good dredgy ore and gossan; but, in consequence of the winter having set in, its further exploration is, of necessity, for a time suspended. These lodes are all situated in the southern side of the valley, and almost opposite Wilson's Mine. The only one that has been worked during the past year is the new south lode, which at first was regular and promising, and for a time yielded a fair average quantity of ore; latterly, however, it became deteriorated, and in meeting a small cross-course, at the depth of about nine or ten fathoms from the surface, completely disappeared. A level was driven for the purpose of refinding it, but hitherto unsuccessfully, and being in a hard and uncongenial stratum, has been suspended until more favourable time and circumstances will admit of its being resumed; the other lodes are also worthy of trial, but at present a resumption of the workings on them is not to be recommended.

Inner Stream.—The workings on this part have been extremely partial from their commencement. The lode is situated close to a stratum of alum slate, which can be traced from hence to the eastward of Ryper's. Some good ore was formerly produced from the backs; but at the depth of two fathoms, on its immediate contact with the slate, it became disordered. A cross cut has been driven a few fathoms from high-water mark, but without finding any places of the lode. The convenient situation of this lode, being close to the sea, and only half an English mile from the smelting-house, and the circumstance of its containing good ore before dropping into the slate, would render a further trial desirous, and more particularly so, as from its run, dip, and general character, we have every reason to suppose it a continuation of Ryper's, Maskar's, Mitchell's, and Wilson's. Several smaller veins and indications of copper lodes are visible in this vicinity, and are worthy of further investigation. In the year 1834, not an inconsiderable produce of copper ore was obtained from a mineral deposit, a short distance from the present adits, and formerly known by the name of "Levy's Hope."

Church Lode.—This is the original lode on which your establishment was founded. It was worked by the Danes, who commenced a sink about 130 or 140 years ago. This sink was subsequently resumed by the present proprietors, before the discovery of any of the other lodes, and has since, from time to time, been partially explored. The lode is large, and appears regular, and has occasionally yielded some good quality of ore. The workings are not extensive, and have always been worked on as a secondary object. We are now driving a level easterly, for the purpose of exploring the lode in that direction.

About thirty fathoms higher up the hill, another small lode was discovered some months ago; it yielded about two tons of fair quality ore before the winter set in, and put a stop to further proceedings. Another lode, about 100 fathoms north, was intersected several years ago in an adit called at that time the Church adit, but being found large and poor, no further notice has since been taken of it. Several smaller veins are found in this district, but on which no kind of exploratory working has been undertaken; all these places, from their proximity to the smelting-works, and otherwise convenient situation, are worthy of further trial.

Powder House.—No operations have been carried on in this mine for several years; the lode to the westward was found for a time productive, but the water charges rendered the incidental expenses more than the workings could bear; an adit level was afterwards commenced in the deepest part of the mine, and the water drained; subsequently, nothing has been done. The lode has been traced upwards of fifty fathoms towards the north-east, over the side of the mountain; it contained a small quantity of ore in every place uncovered, and would warrant a further exploration; it is situated only a few hundred yards from the smelting-house, and an adit level might be driven on the course of the lode at a comparatively small expense.

The Old Mine.—So much has latterly been written respecting this mine, that any remarks I may now offer will almost be superfluous; the size of the lode, and extent of the ground explored, have so often been pointed out and enlarged on, as to render any further comment on this head unnecessary. The advantages expected to be derived from a deep adit level for unwatering the works below Bergmesters, have also on many occasions been expatiated on; and the sooner some deeper workings be undertaken for laying open the large extent of lode underneath the present level, and between the entrance to the mine by the railway and Bergmaster's shaft, the earlier would be the supplies of fluxible ores to the smelting-house. In the present instance, I would, however, beg to draw your attention to the propriety of exploring the lode at the surface, and lower down the side of the mountain to the westward; after which, and should the lode not be found in that direction, the old adit level so frequently alluded to might be advantageously resumed. In the mean time a stope or two might be set below the level in the middle sink; and as early as possible in the spring of next year, I should advise the sink to be cleared and the old workings further investigated. This sink is said to be ten or twelve fathoms below the present level; and by those who last worked in it I am informed that the lode was equally productive in this as in any other part of the mine.

Quarvig.—The unusually promising appearances and prospects held out at the commencement of last year have, as far as regards the actual returns of copper, been fully realized, and even exceeded our expectations. A number of small lodes and veins were discovered during the summer, whilst investigating this before unexplored part of the country, all of which have produced ore in various proportions—some occurring as large conical deposits, yielding large returns for a short time, whilst at others the produce was small, but more regular. On the whole, however, the flattering prospects are changed, and almost all the workings are poor.

The purple lode may be considered the best, from the circumstance of its yielding rich purple ore, but consisting only of small veins; no hopes of permanency can be held out. Next to this is the north-west lode, which has also been fluctuating, and its copper production latterly very little. The original lode, so unusually productive at the commencement of last year, is now unproductive; it will, however, be advisable to continue the level a few fathoms westerly, to discover if any change may be expected. The returns from hence for the present year, without some great and unexpected improvement, will be very small, in consequence of their present insufficiency to cover the expenses; several of the workings have been suspended, and a further reduction may be expected. In addition to the several branches of the mining department here described, there are many other lodes and veins, containing copper ores, found in the immediate vicinity of the works. Some of these have been worked on as long as the production met the expenditure, but, together with many others, have never been explored; they will be more narrowly inspected in the ensuing summer, and the result of the investigations made known to you in due course.

Ore Dressing.—In consequence of the greater part of the poor ores having been smelted last summer as a flux for those produced at Raipas, little was left to be dressed with machinery. At the present time, however, we are dividing the ore into different classes, for the ensuing summer operations, consequently the actual returns during the winter will be found much lower than the estimates, as the latter are, however, invariably made from actual weights and measurements. I do not apprehend any deficiency will be found at the close of the year; when we hope to return a larger quantity, and at a higher per centage than has latterly been the case.

S. H. Thomas.

Annual Smelting Report for the year ending the 30th of September, 1844.

Alten Copper-Works, Dec. 17.—The annexed table is, I hope, sufficiently detailed to give you a clear insight into all the different processes, and their cost throughout the year. I shall, therefore, only offer some few remarks on each process, as well as propose some alterations which, in my opinion, would assist in reducing the smelting cost. The calcining is performed by two different modes—viz., in the open air, and in the calciner furnace, and by looking through the table you will observe that the ores are mostly treated by the former method, while the regulus is chiefly prepared in the calciner. The calcining in the open air is certainly the most preferable process, both as regards expenditure and good work, and we should never use the calciner if we had at all times a sufficient supply of regulus, but it is necessary to have at least sixty tons on hand in order to keep the metal furnace in regular work—a stock which we never have been able to keep hitherto. We ought also to have a proper shelter for this process, in order to effect it as cheaply as possible; in its present state the snow, rain, and smoke, very often prevent us from going on regularly. Notwithstanding all these impediments, you will observe from the table, that the outside calcining has not cost one-quarter of the same process performed in the calciner. I must observe, that the calcining of regulus outside, although more expensive than the ore calcining, is still at least 50 per cent. cheaper than in the calciner furnace. The ore smelting has only been performed in reverberatory furnaces this year—viz., in Nos. 1, 2, and 3, of which the two first only have been applied to ore smelting; the third has also been used as a metal furnace. This process has with few exceptions, caused by the bad state of the furnaces before they were rebuilt, and by the want of good materials to repair them, before the new supply of fire-clay arrived, proceeded very satisfactorily, and the expenses have been very moderate, considering the heavy repairs—so much so, that I scarcely believe it possible, under similar circumstances, to perform this process cheaper in reverberatory furnaces. The smelting of regulus was performed chiefly in furnace No. 4, but also in furnace No. 3. The expenses of this process are rather less than formerly, and would be still lower, if we always collected a sufficient stock of regulus to go on regularly for a time, and then stop until a new stock was collected. The roasting process, with few exceptions, performed only in No. 5, has been rather expensive, but I hope to decrease the cost considerably for the future. The chief reason of the heavy expenses is the low quality of the white metal, which again arises from the insufficient calcining of the regulus. If we were able to calcine all our regulus in the open air, our metal would be richer, and, consequently, the roasting much cheaper. The refining has been performed as usual, and I cannot offer you any remarks regarding that process. The copper has been cast in the different moulds we have, and it would be desirous for us to know which form is the most suitable for sale, and commands the highest price. After thus having alluded to the different processes, I take the liberty to propose some alterations regarding the work at the smelting-house, which I hope to show you will decrease the expenses considerably. First, however, I must call your attention to the subjoined table, in which you will find the cost of smelting this year to amount to $7½ per ton of ore smelted. This expenditure I hope you will find moderate, and I venture to say nearly, if not fully, as cheap as in any other establishment of the same kind, considering the heavy repairs this year (we have built four new furnaces and a double stack), and the difference in the price of materials. The chief aim, therefore, is a reduction in the consumption of materials, and I beg to suggest the following modes as in my opinion best calculated to effect this desirable object:—The first we must have in view is to perform all our calcining in the open air, whereby we should save about half the expenses in that process. To do this, it will be necessary always to have a good stock of regulus on hand, before we begin to smelt any regulus. Such an arrangement may possibly delay the shipment of the copper a couple of months, and the only question, therefore, is, whether you will submit to this. It is, however, not in the calcining alone that we shall obtain a saving, but it will also affect the subsequent processes, particularly the roasting, as we shall always be able to obtain a good metal, which, when we use the calciner furnace, especially when the regulus is coarse, is quite impossible, unless at an increased expense. The next is the ore smelting, which, in my opinion, ought to be performed in blast furnaces, by which there would certainly be a saving in that process of about 25 per cent. of fuel, fire-bricks, and clay, while at the same time the wages may, perhaps, be 25 per cent. higher. The real saving would, however, amount to about $1 per ton, and the outlay for a proper blowing cylinder and a new steam-engine, in the event of the present one not being sufficiently powerful, would, therefore, be repaid in one year. Besides the direct saving in materials, we should also gain indirectly, by being able to reduce a much greater quantity of Raipas in proportion to other ores—a circumstance of great importance, so long as we are obliged to provide a large quantity of fusible ores of low per centages, and at a heavy mining cost. Lastly, I would wish particularly to call your attention to an arrangement that has before been proposed, and the adoption of which I cannot too strongly recommend—viz., to suspend the work at the smelting-house for a period of the summer. The expediency of this system is obvious in a variety of ways, some of which are to be found in the foregoing remarks; but another highly important one is the opportunity it will afford us during the dressing season of raising the per centage of a large mass of inferior ores, which we are compelled to use as fluxes, and the effect of which will be materially felt in the smelting cost. At this season of the year, also, we should have no difficulty in finding full employment for the workpeople, especially in unloading the colliers, which has hitherto been performed chiefly by the tutworkmen, and, as you are too well aware, to the frequent and serious interruption of the work at the mines. Furthermore, it will enable us to postpone a considerable portion of the ore driving until the winter season, when it can be done at a much cheaper rate. Altogether, I am so fully impressed with its importance, that I beg to recommend this suggestion to your serious consideration.

O. M. Nielson.

Appended to this Report, is a detailed statement of work and expenditure at the smelting department from the 1st October, 1843, to the 30th September, 1844, of which the following are the totals:—*Calcined:* Regulus, 944·100 tons; ore, 1172·000 tons.—*Smelted:* Ore, 3184·918; metal slag, 784·000; sweepings, 66·900; regulus, 958·500; old bottoms, 79·800.—*Roasted:* White metal, 332·000 tons.—*Refined:* Black copper, 193·000 tons.—*Fuel:* Coals, 4784·00 tons; wood, 34·50 fathoms—cost, $12,643 78.—*Cost:* Bricklayers' materials, $3348 117; iron and steel, $468 5; other materials, $169 70.—*Labourers' Wages:* $4338 86; *General Charges:* 3258 80.—Total cost, $24,127 3 4.—Less profit on smelting materials, $761 0 11.—Total expenditure, $23,366 2 17.—Cost per ton, $7 1 16.

Iron Trade of Northumberland and Durham.—Pig metal and malleable iron, of very superior quality to any that can be produced in Scotland from the black-band, is said to be now making in Northumberland and Durham, and at prices that bid fair in time to exclude from those extensive consuming localities all supplies of metal hitherto obtained from other districts.

North Elswick Colliery.—The owners of this colliery have succeeded in getting a pit sunk to the Beaumont seam at the depth of ninety-eight fathoms from the surface, which has proved to their entire satisfaction. The pit, which is nine feet diameter, was commenced on the 10th June last, and by the steady perseverance of Mr. Robert Widdowfield, as managing sinker, with the assistance of Mr. Barnett, the company's agent, the same was completed, in good style, to the bottom of the Beaumont seam on the 6th February, two months of the above time being spent in walling and timbering the pit. The sinking may be considered to have been executed in six months, and it has been accomplished without the slightest accident occurring to any man engaged.—*Newcastle Advertiser.*

Discovery of Minerals on the West Coast of Scotland.—Soda of copper ore, of considerable value, yielding from 65 to 79 per cent. of pure metal, has been found at Kishorn, the property of Mr. Mackenzie, of Applecross; and the prospects are so very encouraging, of finding dilated veins of copper in the large beds of limestone which abound in this district, that a wealthy company in the south have contracted with the proprietor, on the usual terms of a mining lease, to commence operations this spring in raising copper or other minerals which may be discovered on the Applecross estate.—*Glasgow Argus.*

MINE ACCIDENTS.

Bent Grange, Oldham.—H. Stockley was killed from injuries of the spine, caused by unnecessarily rapid winding of a carriage, which was pulled over him. —At the same colliery (belonging to T. Butterworth, Esq.), J. Spurr got into so narrow a passage, that a waggon, in passing, crushed him to death.

Ilkeston, Derbyshire.—P. Bostock was killed by part of the workings falling on him in a colliery in which he was employed.

Coltness Iron Company, near Shotts.—As three men and a boy were descending one of this company's pits, the belt-chain caught hold of the bucket and upset it, precipitating them all to the bottom; the men were killed, but the boy was miraculously saved.

Longton, Staffordshire.—As W. Hannaby (eleven years of age) was pushing a corfe to the mouth of the pit, to be lowered into the mine, it got beyond his control, when both fell down the shaft, ninety yards deep; the boy was killed.

Ballswidden Mine.—A large "scale" of ground fell on and seriously injured T. Leggo, while at work.

Wyndham Pit, Cleator Moor.—D. Lash and J. Wilkinson have died from the effects of injuries received by an explosion at this pit.

Plean Colliery, Stirling.—As D. Forsyth and his son were undermining a large piece of coal, it suddenly parted from the roof, and, falling upon the son, killed him in the presence of his father.

Woodhead Lead Mines.—A poor boy, named Murray, fell down a sump, thirty-six feet deep, and was seriously injured.

Thistleyfield, Butterworth, Lancashire.—Two young men were killed while employed in a coal-pit.

Firgrove Colliery, Middleton.—As three brothers were descending Messrs. Knowles's pit, Milnrow, in consequence of the head stocks giving way, they came in contact with an ascending tub, and were thrown out, two being killed.

Margam Colliery, near Pyle.—An explosion of fire damp took place here yesterday week, but the men, with one exception, fortunately escaped by throwing themselves upon their faces into the water running through the works. J. Jones, being more exposed than the rest, was much burned by the ignited damp.

The late Accident at the Hayeswood Coal Mines.—Some time previous to the late disastrous event, as recorded in the *Mining Journal* of the 8th inst., it was known to the managers of the Hayeswood Works that they were approaching the neighbourhood of some old workings, which had been closed for many years, and had become filled with water; still, not being in possession of any plan or map to indicate the exact proximity of the exhausted mines, no danger was entertained, nor was any indication perceived of the probable approach of any large body of water. The entrance to the mine by which the labourers descend is about 164 fathoms in perpendicular depth; the pumping shaft, which is parallel to, and a few yards distant from, the working shaft, is 190 fathoms in depth, and lower than any other portion of the works. From the bottom of the working shaft or entrance, the main road of the mine, along which the trams are laid for the coal waggons to traverse, runs to the extent of about 400 yards, numerous branches extending on both sides to the right and left, in various directions, and many of them crossing each other. About two o'clock on the morning of the accident, one of the overlookers of the night labourers discovered, as he imagined, indications of the approach of water. The night gang left their work about the usual hour in the morning, and were succeeded by the day labourers, to the number of 100, men and boys. The overseer of the works (Mr. Evans) entered the mine about five o'clock, and his attention was at once drawn to the unusual appearance of the damp; he conceived it, however, to be nothing more than what is technically termed the "bleeding of the coal," which is usually discoverable in the mineral, and is often accompanied with a slight singing noise; this noise was not, however, heard on the present occasion, nor was there any quantity of water observable. Having examined the spot where he supposed danger existed, Mr. Evans proceeded to visit other parts of the mine, but had not gone far before his candle was nearly blown out, and almost immediately he met a boy running for a light, his candle having been blown out by the draught. The alarm was immediately raised, and the labourers hurried to the entrance; many, however had their lights extinguished, being overtaken by the rush of air, and all were nearly suffocated. At length, means were adopted for raising the men by batches of about a dozen, but, after all the efforts taken to rescue them, on the roll being called, it appeared that eleven still were missing, and yet remained in the mine. The water gradually rose; and, though the pumps have been constantly going, the engine making eight strokes per minute, and lifting upwards of 10,000 gallons of water, it is feared some days must yet elapse before the works will be so clear as to allow of any search being made for the unhappy men who have thus suddenly perished.

Boiler Explosion.—At an inquest, held on the body of John Hughes, an engineer, who lost his life from the effects of a steam-boiler explosion, at the premises of Mr. W. Edwards, file manufacturer, of Manchester, a boiler-maker, named Shuttleworth, stated that, since the accident, he had inspected the boiler, and found the damage confined to one plate—the rest being perfectly sound. The boiler was composed of beaten iron, three-eighths of an inch thick; it was 14 ft. long and 4 ft. in diameter, about 13½-horse power, and upon the high-pressure principle. The rupture was immediately over the fire, where the draught was the strongest, and extended to the rivet holes in the edge of the plate, just missing the rivet holes. The plate was hollow, and bulged downwards—the hollow being seven inches long by six inches broad. In his opinion there had been a blister upon the plate where the rupture had occurred; there were two other blisters on the plate, the largest being 15 inches long by 6 inches wide, and the iron had shelled off through the action of the fire, to the thickness of one-eighth of an inch; the stoker or engineer ought long since to have known that it was dangerous to work with the boiler in that state. The witness had heard from the workmen that the steam was up at a pressure of 20 lbs. to the square inch at the time of the accident, but the plate must have given way, sooner or later, even with a less pressure. The jury returned a verdict of "accidental death," coupled with an opinion that there was an urgent necessity for the appointment of public inspectors of steam-boilers, to act under the control of Government or of the local authority.

Wellington Pit on Fire.—On Tuesday morning, the 11th instant, some boys who are employed at the Wellington Pit resolved on having a fire to warm and cheer their dreary locality; so, having procured some straw and broken pieces of wood, they achieved their object—but not without doing an incalculable amount of mischief, by setting fire to one of the seams. The band, which was burning at the time of our going to press, has spread itself over a very large extent of coal. The miners are, of course, off work; but, from the exertions made by Mr. Peil to put it out by the use of forcing pumps, &c., it will no doubt be extinguished in a day or two.—*Whitehaven Herald.*